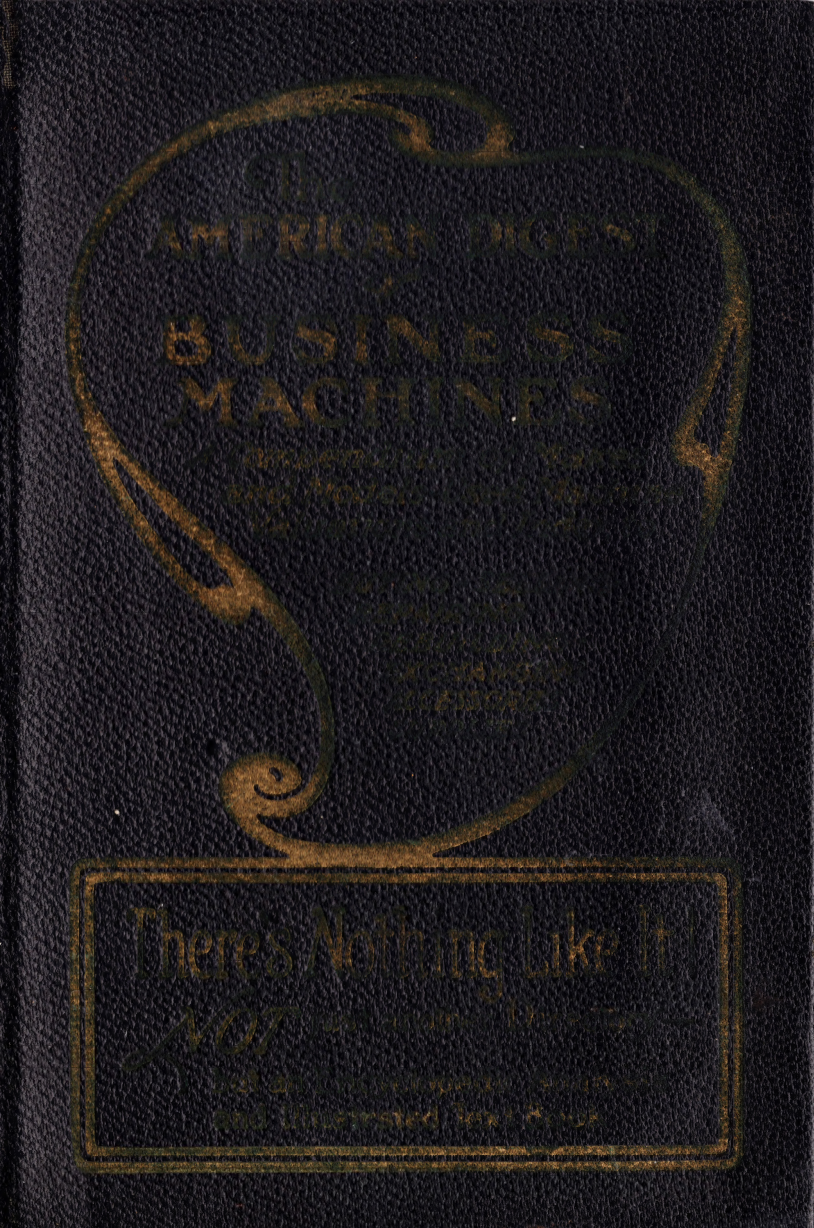

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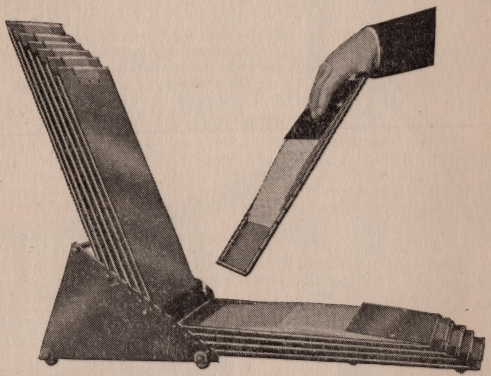
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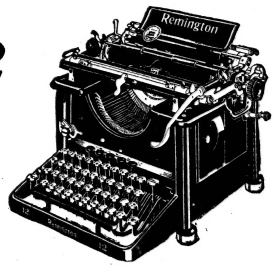
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Never disturbs no matter how close to the employer it is used. The sum of Remington engineering, construction and materials. Combines durability, speed and capacity with Remington features. More and better work with less fatigue. Wanted by both the employer and the operator. The NATURAL touch, makes the day's work swift and easy. Fourteen noise eliminating features.




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Includes the Remington Tabulator Key Set, the Remington Decimal Tabulator and other important Remington distinctive features. A letter writer, form writer and column figure writer. Carriages that write lines 22 inches, 16 inches, 12 inches, 9.5 inches and 8.1 inches long.

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### Remington Portable

Complete in its case, only four inches high. A child can carry it. For the traveler, the doctor, the writer, the clergyman, the farmer, the student, the storekeeper, the housewife, the children—for everybody everywhere. Writing keyboard just like the big machine. No shifting for figures.

### Paragon Ribbons

Remington factory made. A ribbon for every need. Manufactured for all makes of writing machines to supply the demand for high quality supplies. In various colors and combinations of two colors.

### Red Seal and Rival Carbon Papers

Remington factory made. Clear and clean copies and more copies. In various weights, sizes and finishes. The most for the money.

*The Remington line is complete in every field and for every purpose*

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By
JAMES H. McCARTHY,
Chicago, U. S. A.

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# THE
# AMERICAN DIGEST
## *of*
# BUSINESS MACHINES

*Combined with the*
American Trade Guide *of*
Store *and* Office Machines

A COMPENDIUM OF MAKES AND MODELS
WITH SPECIFICATIONS AND PRINCIPLES
OF OPERATION DESCRIBED

*And including*

USED MACHINE VALUATIONS

*and an Index to*

BUYING SELLING
APPRAISING EXCHANGING
REBUILDING REPAIRING
ACCESSORIES SUPPLIES
PARTS

COMPILED, EDITED AND PUBLISHED BY
JAMES H. McCARTHY
AMERICAN EXCHANGE SERVICE
35 South Dearborn Street
CHICAGO, U. S. A.
1924

## INDEX OF MACHINES INCLUDED

Adding Machines
Addressing Machines
Autographic Registers
Baling Presses
Bookkeeping Machines
Calculating Machines
Cash Registers
Check Endorsers
Check Writers
Cloth Measuring Machines
Coin Counting Machines
Coin Changing Machines
Combination Registers
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Finding and Filing Machines
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Letter Copiers
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Signature Writing Devices
Stencil Cutting Machines
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Tape Sealing Machines
Ticket Issuing Machines
Time Stamps and
Time Recording Devices
Typewriters
Visible Index Systems
Watchman's Supervisory Systems
Wax Sealing Machines

Valuations are shown for all major lines of used machines.

The information contained herein has been obtained from sources considered reliable, and, while not guaranteed, is believed to be accurate and up to date.

## PREFACE

A hundred million dollars and more are spent every year for the purchase of business machines.

Despite the fact that the objects sought by the use of such equipment are the creation of efficiency, the saving of time, the elimination of waste, and the establishment and carrying out of systems, the very procedure of their selection and purchase always has always been, of necessity, a hit-or-miss proposition. There has been no organized information for the purchaser—no uniformity of comparisons—no basis of confirmation of opinions and conclusions.

The inconsistency of the situation is almost unbelievable, but it is nevertheless true. In his endeavor to purchase efficiency, the buyer has been without benefit of it.

What the business man has been able to know about the relative merits of each machine, he has learned from a limited personal contact with a comparatively few machines, and principally, from carefully prepared advertisements and sales talks, both naturally partial and designed to make up his mind for him. Extensive investigation, occasionally undertaken by the very largest concerns, has always been costly. The executive in the average concern has not been in a position to acquire the knowledge he should have about the many machines designed for his use. Even if he had the time and was willing to pay the cost, a personal investigation in the end, perhaps, would be unsatisfactory and unreliable because he lacks the technical experience and familiarity necessary to go below the surface and discern the facts.

In the purchase of practically everything else, a medium of guidance and verification is available. Printing and advertising have been reduced to scientific standards backed, if desired, by the expert guidance of advertising agencies. Market reports in the daily papers give gradings and quotations of nearly all commodities. The purchase of stocks and bonds has been reduced to a science through the affording of detailed analysis of each issue and daily market quotations.

Yet, in the spending of perhaps several hundred dollars for a business machine or device that may require the changing of the entire routine in his office, the employment of specialized help, and the purchase of expensive supplies, the purchaser is left entirely to his own resources, and, as so often happens, he finds, eventually, that another machine, the existence or advantages of which he was in ignorance, is better suited for his needs than the one he bought.

Nearly all successful concerns include, as part of their history, a quantity of discarded equipment, not because it is obsolete, but because they found after they had made the investment that another device would do the work better and cheaper. The loss and delay occasioned by installing new equipment has often been severe among the larger concerns, but the issue has been faced and new equipment purchased for the saving it would eventually afford. The smaller

concerns, those that buy but one or two pieces of equipment per year, usually cannot afford a new investment and have to go on under the handicap.

The executive who sanctions such unfortunate purchases is often placed in an embarrassing position, when his mistakes become apparent. The condition is aggravated by the fact that the equipment is usually placed where it comes under the daily observation of his associates and the officers of the company.

To provide all business executives with dependable, disinterested information and knowledge in concise form, regarding all machines, is the purpose of this work. It is designed to stand ready at all times to make the man who buys one or one hundred machines a year, a real authority. Much of the information it contains, the executive never before has been in a position to acquire. Its data represents the expert knowledge of many authorities who have spent their business lives in the industry. It has all been welded together in an unbiased, uninfluenced and clearly written manner so that there may be no question in the minds of its readers regarding any make or model. Its purpose is to provide adequate and conclusive information regarding the characteristics, features and functions of the machines available today for each kind of a job, and afford a greater knowledge of the adaptability of present equipment, to the end that additional uses may be recognized, and increased capacity obtained.

But it is not designed only for the man who buys. It will likewise serve the man who sells business equipment. Salesmen and dealers have always wanted to, and should know, authoritatively and neutrally, the facts regarding competitive products. Heretofore they never could be sure that the device they had to offer was the best of its kind for the particular work involved, and when asked about the points of competitive machines, their lack of specific knowledge often has caused embarrassment, evidenced weakness and set up a condition of disadvantage.

In the Digest, therefore, will be found a dependable reference to answer every question of the man who buys, and the man who sells office equipment. It will serve as a mutual authority to settle controversies, lend assurance to decisions and save time in making selections.

An unusual feature, never before available, are the quotations of used machine valuations. Definite, dependable valuations are given for the various models of major lines of machines. The trade out or sale of used equipment need no more be a matter of barter or trade, with consequent feelings of doubt and misgiving. Appraisals for inventory or sale are at last reduced to definite figures. The dates of manufacture, according to serial number groups, establish, authentically, the age and length of service of nearly all machines.

The Digest is a project so entirely new and so unexpectedly helpful and necessary that to comprehend fully its plan scope, purpose and possibilities, a study of the detailed descriptions of its policies and arrangement, as set forth on the pages immediately following, is recommended.

THE PUBLISHERS.

# HOW TO USE THE DIGEST

There are three sections:

1—The Catalog section, describing, illustrating and showing American list prices of machines at present manufactured.

2—The Used Machine Valuations section, comprising data regarding model and serial numbers, dates of manufacture, valuations for used machines of the major classes, and illustrations of machines not now manufactured or obsolete.

3—The Directory section, comprising the names and addresses of manufacturers of new machines, together with the names of their products, names and addresses of manufacturers and dealers in supplies for both the user and the dealer, and a selected list of dealers (wholesale and retail), engaged in buying, selling and repairing used equipment.

The value of the Digest in the hands of the owner depends greatly on the method of use.

If you—

have a job that might be done by a machine,
have a machine and want to know all that it will do,
have decided to buy a machine,
want to compare the merits and specifications of several or all machines of a special class,
want to know the appearance of a machine now manufactured,
want to know the price of a machine of any make or model,
want to find the name of a machine,
want to find the name of the manufacturer and the method of selling,

} See the Catalog Section

If you—

want to know the age of a machine now used,
want to know the present second hand selling value of a machine now in use,
want to see illustrations of models no longer manufactured,
want to appraise a machine for inventory purposes, etc.,

} See the Used Machine Valuation Section

If you—

want to know where to secure supplies for present equipment,
want to know where to secure parts for present equipment,
want to know where to have repairs and overhauling done,
want to buy new equipment.
want to buy used equipment,
want to sell used equipment,

} See the Directory Section

# As to The Legal Right

It is not the desire of the publishers to favor or hurt any individual or concern. An entirely neutral viewpoint has and will be maintained. But to such as may dispute the right to tell the whole story of business machines, the following legal opinion, representing answers to the questions on the next page, is herewith submitted.

GREEN, BEVERLY & RICE
ATTORNEYS AT LAW
30 North La Salle Street
CHICAGO

November 12th, 1923.

American Exchange Service,
35 So. Dearborn St.,
Chicago, Ill.

Gentlemen:

We submit the following answers to your questions concerning your legal right to publish certain data.

1. You have the legal right to publish and sell list prices obtained from the sources mentioned.

2. You have the right to show as a result of your knowledge, the different specifications of each model and to identify models by their correct model number.

3. You have the right to publish the range of serial numbers and to show by serial numbers or other means, the date or approximate date the machine was manufactured, placed on the market or changed in design.

4. You have the right to give an opinion, based upon your judgment, as to the resale value of any machine.

5. After a manufacturer has parted with the title to his machine or product by sale, he has no further control over it whatever, for any purpose.

GREEN, BEVERLY & RICE,
By: Chas. E. Green.

# To Publish This Book

## American Exchange Service

Publishers of

## The American Digest of Business Machines

35 South Dearborn Street CHICAGO

Green, Beverly & Rice,
30 North LaSalle St.,
Chicago, Illinois.

November 7th, 1923.

Gentlemen:

Please submit an opinion on the following questions:

1. Have we the legal right to publish and sell to the public, the prices, descriptions and specifications of different manufactured articles, such as adding machines, cash registers, duplicating machines, typewriters, etc. Such prices having been secured by us from quotations, catalogs or price lists published by such companies or by direct investigation, requests and inquiries?

2. Have we the right to show from a disinterested standpoint, as the result of our own investigations and knowledge of each machine, the specifications of different models of each make of machines and identify such models by the maker's model number?

3. Have we the legal right to publish, as the result of our own knowledge and investigation, the range of serial numbers of such machines, showing by the arrangement of such serial numbers, the date of manufacture or the date that each model was placed on the market, or changes in construction or design, as an example: May we show that the ..... Company reached serial No. 20,000, say in May, 1917?

4. May we show the valuation of used machines of each make or model or in groups of serial numbers for each make or model? Such valuations will be arrived at by taking the average of the prices quoted by such people as will buy such equipment for cash, to anybody offering it to them, or the cash equivalent allowances offered for such machines on the sale of new ones. In this connection, these valuations are not the valuations of any company or any group of companies, nor any group of dealers, and although they may parallel in some instances very closely, the exchange allowances as quoted by manufacturers for machines of makes other than their own, no absolute parallel will be drawn.

5. Has a manufacturer of a machine after he has sold it, any right to control the future valuation of that machine in the hands of either the original or a subsequent owner?

AMERICAN EXCHANGE SERVICE,
By: J. H. McCarthy, Manager.

# THE PLAN, SCOPE AND PURPOSE

## Entirely Different

There is nothing like the Digest. Never before has there been available in any industry a volume wherein could be found such knowledge giving data regarding ALL makes of ALL classes and kinds of business machines.

Catalog space has been offered without charge or obligation to all manufacturers, distributors and selling agencies. To be really useful, dependable and worthy of the time and money spent in its compilation, a policy of "Pay-if-you-will-enter" could not be considered. Representaion has not been limited to such concerns as might feel disposed to pay to have their products included. It embraces everybody's everything. It is as complete as the dictionary.

The characteristics, features, differences and functions of each machine, the various attachments for use with or on them, and their adaptability for different classes of work, are clearly described and illustrated. Present list prices covering each model are given; the name and address of each manufacturer and the method of distribution is shown. Many machines not quite ready for the market are described and illustrated.

## Authoritative

The information it contains, has, for the most part been provided by the co-operation of manufacturers and distributors. It has also been gathered from other authoritative sources over a period of many years and is brought strictly up to date.

## Impartial

Every machine is cataloged, described and illustrated on an impartial basis. Facts are stated as they are found. There are no colorful advertising phrases or copy, such as might be designed to influence prospective purchasers, if the different companies were allowed to write their own descriptions.

The publishers are in no way connected with any person or concern manufacturing office or store machines. The standards and policies of editing are strictly neutral. The personnel is specially experienced in the field, competent to carry on the research, and analyze and edit the mass of data necessary to provide a publication of this kind.

## Advertising

The catalog pages are not advertisements. Naturally, some advertising is carried, but not in the text matter and not influencing the text. Special display advertising spaces have been sold to concerns who wish to supplement in their own words what the Digest says about their products in the text matter. All such advertising is readily distinguished from the text, and the acceptance of paid advertising from any maker, does not in any way influence the catalog matter regarding his products.

## Historical

Early machines still likely to be in use and from which present models have been developed, are reviewed and explained. Short instructive sketches tracing the origin, development and evolution of each line are included to indicate the length of time on the market and the relative success and popularity of each kind of machine.

## Helps Solve the Second Hand Problem

Used machine valuations are given for each major line of machines. These valuations are not arbitrary. They represent the average valuation or dealers' buying prices throughout the country. They do not presume to represent the allowances of any one company or any one group of dealers. Like the catalog section, they are strictly neutral and dependable and are the result of extensive research and accurate checking.

The information necessary to establish such used machine valuations, includes analysis of model and serial numbers, their locations, meanings and explanation of symbols or codes used in number plate markings. The dates of manufacture of principal machines, given in serial number groups, enable a ready check on the authenticity of serial numbers, the approximate age or length of use or obsolescence, and the used valuation of such machines as have different valuations for different serial number groups.

## Value to the Executive

The everyday value of the Digest to the man who is not in the trade, might be illustrated by taking for example an executive who is in the market for, say, an adding machine. In the catalog section, (sub-section indexed "Adding Machines"), all the different makes will be found, catalogued, illustrated and described. Complete, up-to-the-minute, authoritative, unbiased knowledge is afforded of the construction, features and characteristics of each machine that is a factor in the market to do the particular work required. The price range is shown.

If an old machine is to be traded out as part payment on the new, it tells where to find the model and serial number (by which the values of such used machines are usually determined); the age or degree of obsolescence; and a standard valuation of that particular serial numbered machine. It answers his every question.

The executive knows, therefore, before he ever calls in a salesman, just what machines are on the market, the advantages and disadvantages of competitive machines for the work to be done and the valuation he can expect for his old machine.

Nowhere else could this information be secured. Even if the executive did have the catalogs or advertising literature of two, three or four companies, his decision would probably be based on the claims, sometimes extravagant, that are found in the advertising literature of some companies, and in the final analysis, he would probably select the machine of the company having the best advertising writer or the cleverest salesman, and later find that another machine, either less or more expensive, would have been preferred had he known of its existence and capabilities.

Should he desire to buy second hand equipment or sell present equipment outright for cash, the directory section shows the names of dealers in used machines, including wholesalers, handling each particular class of machine in the city or territory nearest him. It also tells where to buy parts, supplies, or accessories, and who, besides the manufacturers can service or repair his equipment.

## Value to the Salesmen

The publishers appreciate that a fine axiom of salesmanship is: "know your own machine—forget your competitor". But the present day executive, a student of machines and their application, often brings up points about competitive machines, that a salesman, if he is in ignorance of the merits or deficiencies of that particular make, cannot very well discuss, hence, he finds himself at a disadvantage. Knowledge is power, and the Digest, therefore, is designed to tell salesmen the true and complete facts about every make of machine of the same and of every other line. It helps a salesman sell his own line better, and acts as a curb should he be the type of salesman who indulges in making disparaging remarks

about competitive machines or extravagant claims for his own.

All office and store machines are more or less allied. Therefore, a knowledge of other machines entirely different from his own, sometimes secures prestige that helps to get an order or build up good will. It also shows possibilities of bettering his condition with a new line.

## Value to the Dealer

Dealers, particularly those so located that they seldom have an opportunity of personal contact with sources of information, are afforded knowledge of all machines, equal to that of the best informed men in the business. They are better able to sell because of an increased knowledge of the features and functions of the various machines they handle. The operations and selling points of machines, never met with before, are made known to them. They are in position to know the correct buying price and the original list price of every machine offered to them for purchase.

No matter where located, dealers at last have a means of keeping in touch with all that is new in the trade, and of knowing of additional sources where supplies, parts and other needed articles may be purchased.

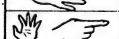
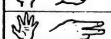
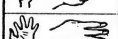
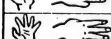
Opportunities to sell new machines, not already represented in their localities, are made known to them.

## Use in Schools

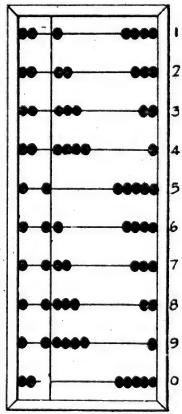
To the students in business colleges and schools, who have need for a better and more intimate knowledge of the tools of business than they can get from the necessarily limited equipment at their disposal, the Digest offers a study of every machine they may be called upon to use. It will impress the cost of such equipment upon their minds—emphasizing the necessity for care and upkeep. It broadens their general knowledge, hence, makes them more valuable in the positions they will later hold. But more than all else, it shows the development of machines, to do office work efficiently, and stamps in their memory names and types to serve in later years in recognizing the need for such equipment, and, as so often happens, recommending its purchase.

# Adding Machines

## ADDING MACHINE HISTORY

| First Natural Decimals. | Primary Word Meaning. | Ancient and Modern Chinese. | | Ancient and Modern Roman | |
|---|---|---|---|---|---|
|  | One Finger | 一 | 一 | I | I |
|  | Two Fingers. | 二 | 二 | II | II |
|  | Three. Fingers. | 三 | 三 | III | III |
|  | Four Fingers. | 四 | 𠫓 | IIII | IV |
|  | Five Digits or One Hand. | 𠄠 | 𠄠 | V | V |
|  | One Hand and One Finger. | 上 | 上 | VI | VI |
|  | One Hand and Two Fingers. | 上 | 上 | VII | VII |
|  | One Hand and Three Fingers. | 上 | 上 | VIII | VIII |
|  | One Hand and Four Fingers | 上 | 𠀎 | VIIII | IX |
|  | Two Hands or One Man. | 十 | 〇 | VV | X |

Abacus or Swan Pan.




In connection with the study of adding and computing machines a knowledge of the origin of figures and a brief review of the development of adding machines may be desirable.

Before the idea of making marks of record was conceived, the fingers served for both numerals and a means of expression for them. The first column of the above chart illustrates what was probably the only method of counting and the expression of quantities in prehistoric times. In that age the mind of man was probably not able to comprehend any number larger than ten—"two hands" or "one man"—it was the limit of counting on his fingers.

The first marks of record are the numerals of the ancient Chinese, shown in the illustration. It will be seen that their characters are really a development of the finger method of the Ancients. One horizontal line stood for "one finger", two lines "two fingers", three lines "three fingers", four lines "four fingers", and a distinctive character for "five fingers". The origin of this character is quite simple to understand. By holding up the left hand with the palm toward the face and drawing a line down the inside line of the thumb, throwing a circle around the palm and continuing out the line of the fore finger, the Chinese 5, indicating "one hand" or "five fingers" is made plain.

Six was made by drawing a horizontal line beneath a vertical line indicating "one hand" and "one finger". Seven, eight and nine then became quite easy, and for ten, or "two hands," the figure represents a man with arms extended.

Modern Chinese numerals differ slightly from the ancient; in two or three the length of the lines for fingers vary to add distinction. "X" takes the place of four lines for the numeral 4. In seven and eight, the horizontal line varies in length as in two and in three, and nine is made up of a combination of four and five. The cipher was substituted to denote ten.

The ancient Romans also had a way of counting by the finger method, but their marks were made vertical instead of horizontal. The Roman "V" for "five fingers" came from looking at the hand with the thumb extended, and in the early days, two V's represented "two hands" or ten, instead of the modern "X".

A study of the ancient and modern Chinese characters will reveal a decided indication that they may have provided the original from which modern numerals were evolved.

The Chinese character for two might have been changed easily to a resemblance of our modern 2, through years of writing it hastily with the consequent joining of the end of the top line with the beginning of the bottom line. Three may have been fashioned in the same way, the last line being at some time eliminated. Eight, being the horizontal lines of three with a vertical line added, could easily have developed into the character we now use. Five bears a great similarity, and six if written fast, will shape up something like our modern 6.

## The First Counting Device

The earliest known instrument of calculation of any importance, is the Abacus or the Chinese Swan Pan (illustrated beside the chart). The date of its origin is not known, but it appears to have been used by the Egyptians as early as the year 460 B. C. It was probably used by the Babylonians and certainly by the Greeks and Romans, from whom it spread to all Europe.

The Chinese first claimed the distinction for the invention of the Swan Pan many years before it came into popular use in other countries. It is possible that as early as 1000 B. C. one of these little instruments, found its way across the Asiatic Continent.

The Swan Pan varies in width, some having few and others many rods; the more numerous the rods with their accompanying beads, the greater their capacity. The size most generally used, has fifteen rods and on a Swan Pan of this size, the highest number that can be run up is 999,999,999,999,999. The ten rod, or ten-place frame shown in the illustration is capable of receiving a number as high as 9,999,999,999. The whole number as set up by the beads, as shown, is 987,654,321. This number is shown because it indicates all of the different bead settings, (1 to 9) in consecutive order beginning with one at the top down to 9 on the next to the last rod. The bottom rod is set blank, or on cipher.

The five beads in the wide compartment are the digits while the two beads in the narrow compartment are the "hands", each of which is, of course, five times the value of the digit bead. The Arabic numbers opposite each rod indicate the digit number set on each rod. For convenience in understanding the method of counting on the Swan Pan, consider the five beads as fingers and the two beads as hands. A "finger" set against the compartment bar counts 1, while a "hand" set against a bar counts 5. Following the settings down the illustration, it will be noted; one finger to the bar equals 1, two fingers to the bar equals 2, three fingers to the bar equals 3, four fingers to the bar equals 4, one

hand to the bar equals 5, one hand and one finger to the bar equals 6 and so on down to 9, which is shown by one hand and four fingers to the bar; 10 could be shown by setting two hands to the bar or one hand and five fingers. But in order to show the first nine numerals on decimal place, the bottom rod has been set at cipher.

The Japanese Soroban is similar to the Chinese Swan Pan, except that the numeral compartment has only one row of hands instead of the two rows in the Swan Pan. This seems to be an improvement over the Swan Pan as no use can be made of the second row of hands in a strictly decimal operation.

The Roman Abacus and the Russian Stchoty, are similar devices for mechanical finger counting.

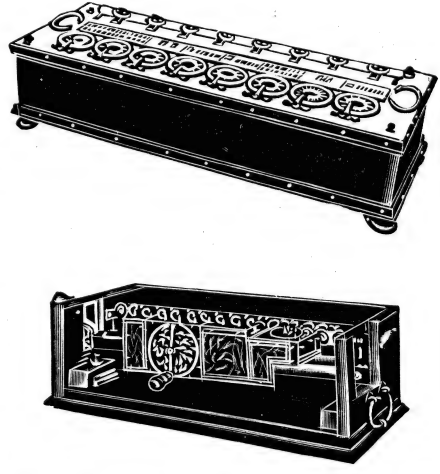
## Development

The first real improvement on the ancient Swan Pan consists of counters on a plan attributed, probably erroneously, to Boethius. Later these counters bore numbers and were attached to rods, discs and cylinders, which could be moved to indicate the desired results. An example of this type is a set of rods invented by John Napier, a Scotchman, about the middle of the seventeenth century. Napier is the man who gave Logarithms to the world.

In 1642 Blaise Pascal, the French philosopher, produced a model which while far from perfection, came nearer the desired end than any other up to that time.

In 1671 the Pascal machine was modified by G. W. Leibnitz to facilitate multiplication by repeated addition. The Leibnitz machine shown in the illustration, is the first machine on which all four operations of arithmetic could be done.

In 1822 Charles Babbage, an Englishman, produced a machine about the size of a square piano, which had sufficient merit to attract the attention of the English Government, which in 1823, began supplying funds for the continuation of the work. During a period of some ten years £17,000 were supplied, but the machine was never completed. The House of Parliament finally refused any further grants. It was capable of working out Logarithms and printing tables of them.



Top: The First Calculating Machine, by Blaise Pascal, 1642. Bottom: The Leibnitz Calculating Machine, 1671.

but could not perform arithmetical operations.

In 1820 the French mathematician, M. Thomas de Colmar, invented the first practical machine for rapid and accurate addition, multiplication, subtraction and division. Multiplication was accomplished by repeated addition. It was operated by means of a number of pointers and a small crank.

The first machine to apply the multiplication table and thus employ multiplication directly, was invented by M. Bollee, a Frenchman, in 1889 and was the forerunner of the present day "Millionaire" invented in 1892 by Otto Steiger of Switzerland.

It was only in recent years, in fact only since the adoption of depressable keys, that successful machines for figuring have been devised. There were several different machines utilizing keys, previous to the experiment of Dorr E. Felt of Chicago, who, commencing in 1884, developed what is the present day Comptometer. Contemporary, or previous to Mr. Felt's experiment, Frank S. Baldwin secured a patent on a machine that was a forerunner of a line of successful modern calculating machines, including those of the Monroe Calculating Machine Company and with some variations, the Brunsviga and other machines of the Odhner type.

The first known, depressable key. crank-operated machine made to add columns of figures and to print numerical items as they were added, was patented in the United States in 1885 and in England in 1893, by Henry Pottin, a Frenchman.

In 1888 William Seward Burroughs patented a machine somewhat similar to the design of Baldwin, which was designed to show only the final result of the calculation. Later another patent was taken out by him to combine the recording of numerical items and totals in one machine.

These early Burroughs machines were the foundation of the American Arithmometer Company, the name of which was later changed to the Burroughs Adding Machine Company.

The first combined typewriter and adding machine was patented by A. C. Ludlum in 1888.

It is stated that in 1892 there were only five hundred calculating machines in use in the entire world, but from then on the marketing possibilities encouraged development of the many makes of machines on the market today.

# ADDING MACHINE CLASSIFICATIONS

Present day adding machines may be divided into three general classes or types:

(a) **Listing;** comprising all machines providing a printed record of items and totals.

(b) **Non-Listing;** comprising machines not having a printing mechanism, designed primarily as adding machines, as distinguished from

(c) **Computing;** comprising non-listing machines designed for high speed calculating, generally required in extending or checking invoices, cost accounting, foreign exchange, pro rating interest, discount and other financial calculations; engineering problems, textile, railroad, public utility or insurance accounting, or for work that requires a diversity of figuring.

## Keyboards

Each classification is again resolved into divisions as determined by the method of item set-up (i. e. putting an item into the machine).

**Full Button-key Keyboard** machines have a row of keys for each column, up to the capacity of the machine, and a separate key for each digit in each column. Therefore, a machine having an item capacity of 999,999.99 would have seven columns of nine keys each, or 63 keys exclusive of control keys.

**Flexible Keyboard** is a full keyboard on which a key which has been depressed in any column is automatically restored to a normal inactive position, when any other key in that column is depressed. The amount indicated by the last depressed key is the amount that will be added. The principal function of a flexible keyboard is to allow corrections of set-up in individual columns. It is generally included as standard equipment on all present day full keyboard machines.

**Ten-key Keyboard** machines have a separate key for each digit, and provide progressive column positions automatically as the keys are designated for the item. Thus, an item of 560 would be set up by pressing the 5 key, then the 6 key then the 0 key; the 5 and 6 being automatically moved to their correct columnar position by the operation of the next depressed keys.

**Lever Set Keyboard** includes a variety of designs, such as perpendicular levers that are moved to number positions marked on keyboards (such as on the "Millionnaire," etc.); pull-up levers that are raised to the number positions (as on the "American"); pull-down levers that are positioned at each number position and are pulled down to a "home" position (such as on the "Star," etc.)

**Stylus** includes machines operated by means of a stylus or metal pick inserted in positions corresponding to key positions on a full keyboard machine, (such as "Golden Gem," "Lightning Calculator," etc.)

## Operation

The principle of operation makes another division of each class.

**Crank Operated;** includes all machines on which the amount, as and after it has been set up on the keyboard, is introduced into the machine by the operation, by hand or motor, of a crank or handle. Such machines allow for change of set-up (to correct errors, etc.) before the item is added. (Such as the "Monroe," "Victor," etc.)

**Direct Operated;** includes all machines on which the amount as it is set up on the keyboard is carried directly into the machine and added, as it is set up on the keyboard. (Such as the "Comptometer".)

## Carriages

**Narrow,** is usually applied to carriages taking paper 4 inches and less in width and are usually fixed as to position.

**Wide carriages** include various widths taking paper more than 4 inches wide. Wide carriages are usually movable from side to side and may also be equipped as

**Tabulating carriages** provided with adjustable or non-adjustable stops to regulate column positions of items.

**Automatic Tabulating** carriages have tabulator equipment similar to typewriters to automatically position the carriage by the operation of a key or tabulating lever. Some machines provide automatic tabulation as items are printed, and for some work are equipped for the automatic return of the carriage to its initial position for each item.

## Portability

**Portability** is stressed very strongly by such manufacturers claiming that qualification for their machines. In a strict sense, the term when applied to standard machines, is not meant as it is used in, say, the typewriter industry.

The regular size typewriter weighs on an average no more than a "portable" adding machine. Yet, the claim of portability is not generally advanced for a standard size typewriter, perhaps because of the comparison afforded by typewriters fitted in compact carrying cases.

It would seem that, as compared with a typewriter of similar weight, the thought for expression regarding the lighter weight adding machines, would be "convenience of location for operating" rather than "portability"; and would refer principally to such light weight machines as are usually sold for use without stands. The use of a stand provided with casters, would be expected in a large measure, to overcome the weight of a machine in locating it for operation.

## Visibility

**Visible** is a term customarily used to denote a machine on which the items and total are visible immediately after printing. Correctly used, however, it includes listing machines affording visibility of (a) Set up; (b) Printing point; (c) Accumulated total as the items are added.

Some non-listing and computing machines are referred to as "visible," the term applying with the exception of printing.

**Blind** machines are commonly known as those on which the printing point cannot be seen and the items cannot be read until the carriage is lifted or hinged away from the machine.

## Direct Subtraction

**Direct subtraction** is usually understood to mean subtraction without the use of complementary numbers. Few other than calculating machines of the crank operated type are equipped to subtract direct.

The item to be subtracted is set up on the keyboard in the same way that it would be for addition, but by the engagement of controls, the mechanism functions to show a subtracted result.

On some makes of machines of the listing type, subtraction is controlled from a key or lever on the keyboard, or automatically from the tabulator. The carriage in its movement to different column positions, trips the controls to cause an amount to add or subtract as desired.

Calculating machines are usually constructed to perform subtraction by an entire reversal of the operating mechanism.

## The Principle of Complementary Subtraction

**Complementary subtraction,** the usual method, is accomplished by addition, the same as in multiplication and division. Through the arrangement of the keyboard and the method of operation, results, apparently subtraction, multiplication and division, are accomplished, but actually, it is all addition. Subtraction is really performed on the keyboard before the subtrahend is introduced into the machine.

Nearly all makes of adding machines have on their key tops, what are known as complementary numbers. These are small digits located beside the large numbers used for addition. Their relation to the large digit is such that a total of the small and the large digits on each key, equals 9. (On some very few machines, the first right hand column is arranged so that the total of the large and small digits on each key in that column only, equals 10). The purpose of these co-digits, or complementary numbers, is to build up a complement to the amount to be subtracted, so that when the keys representing the minuend are depressed, and the machine operated, the correct amount will **add** to what is already in the accumulator wheels to produce a subtraction result.

As an example: Suppose an amount of 48 has been added into the machine and an amount of 24 is to be subtracted.

The rule generally given for subtraction is to reduce the amount of the subtrahend by one unit in the last right hand column in which there is a whole number, (not a cipher), and set up this reduced amount on the small numerals. And because the arrangement of the co-digits serves to make a reverse of the keyboard as used for addition, (the sequence of the co-digits being down instead of up the keyboard), depress all the keys to the left marked with co-digit ciphers, all the way across the keyboard.

| | | |
|---|---|---|
| $9^0$ | $9^0$ | $9^0$ |
| $8^1$ | $8^1$ | $8^1$ |
| $7^2$ | $7^2$ | $7^2$ |
| $6^3$ | $6^3$ | $6^3$ |
| $5^4$ | $5^4$ | $5^4$ |
| $4^5$ | $4^5$ | $4^5$ |
| $3^6$ | $3^6$ | $3^6$ |
| $2^7$ | $2^7$ | $2^7$ |
| $1^8$ | $1^8$ | $1^8$ |

Applying this rule: (See keyboard illustration). To set up 23 (the reduced amount of 24) on the small figures, the addition keys, 76, would be depressed. What has actually occurred by this set-up even before the machine is operated, is that the difference between the next higher order (in this case, 100), and the amount to be subtracted, is automatically figured out by the co-digits set up on the keyboard. Had it not been figured out, adding 100 to the 48 already in the machine, would of course, give a total of 148. But we have not added 100, we have added 100 less 24 (which has been automatically figured out on the keyboard, as above described), which added to 48, makes 124. When the co-digit zeros are set up, what is really done, is that all the 9's, as used in addition, to the left of the problem, are added. When 9 in the third column is added to 124 it becomes 1024 and if the next 9 is added it becomes 10,024 and so on until the 1 has been transferred all the way across the keyboard, either to the last column position or entirely out of the machine. That is what happens when the handle is operated and we see in the total dials an amount that looks like this: 1,000,024. Some machines, when the total is taken, automatically eliminate the printing of the 1 at the extreme left and all intervening ciphers, showing only 24.

On machines, the key tops of which are not marked with complementary co-digits, the following rule applies: In making the set up of the minuend, the amount to be set up on the numbers used for addition, should be the difference between the amount to be subtracted and 9, in each column in which there is a whole number, (not a cipher), except in the last column which should be the difference between the amount to be subtracted and 10. The 10 being arbitrary in the last column, accomplishes the same purpose as the reduction of the subtrahend by one unit on machines having co-digit key tops.

## Division

When a subtraction operation is repeated, the procedure becomes division. In the example above given, if 24 were subtracted twice from 48, once as above shown and the same procedure then repeated, another 1 would be transferred to the same column and added to the 1 created by the first subtraction, appearing 2. The transfer, therefore, keeps a record of the number of times subtracted. 48 divided by 24 equals 2; the machine would show 2 in the extreme left dial.

Compound division is accomplished in the same way, the amount of the divisor being subtracted from that part of the dividend representing the next higher order, as many times, or until the remainder becomes less than the divisor. The operation of the machine is then stopped, the divisor set one column to the right and the operation continued until the remainder again becomes less than the divisor. Perhaps an elemental illustration will better bring out the relation of division to subtraction. Suppose a person did not know how to divide and had twelve articles to divide among three people. The elemental way would be to give each of the three one article, which would be the same as one division; give them again each an article and so on until the quantity remaining (dividend) was reduced to nothing, or to an amount less than the number of people. In this case, a division could be made four times, that is, he could take (subtract) three items from his quantity, four times.

## Multiplication

Multiplication is repeated addition, 3 and 3 and 3 make 9 just as truly as do 3x3. Therefore, the way that an adding machine accomplishes multiplication is to add the factors together the number of times that they are to be multiplied. By the decimal system, moving any factor one position to the left, increases its value ten times. Therefore, it is only necessary to add the amount to be multiplied in its proper column positions, the correct number of times for each column. Thus, in multiplying 25 by 12, the amount would be added twice in the first and second columns, then transferred one place to the left (putting it in the second and third columns), and added once. If done on a listing machine, the result would look this way:

25
25
250

And the total of the problem, represented as addition, would appear either on a listing, non-listing or calculating machine.....300

Larger numbers are handled in the same way.

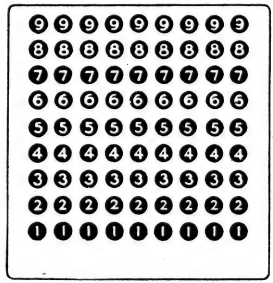
## ANALYSIS OF TEN-KEY AND FULL KEYBOARDS

Volumes of written and spoken arguments have been advanced by interested manufacturers and their representatives, to show the advantages and disadvantages of adding machines equipped with ten-key keyboards, vs. those having full keyboards (one key for each digit in each column).

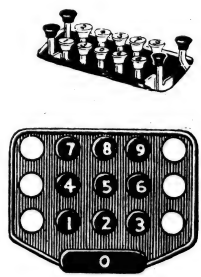
It must be that each design has its merits. Both are produced by engineers who earnestly believe in the principle of their own machines; who are devoting their lives and their money to the promotion of them. Companies manufacturing both types are prospering and constantly increasing their sales.

## ANALYSIS OF TEN-KEY AND FULL KEYBOARDS—continued

Freak arguments, examples carefully calculated so as to expose unusual and seldom if ever met with conditions, make up the bulk of usual comparative analysis and demonstration. Reference to former practices, statements and failures, are advanced, seemingly without regard to the axiom that "Two wrongs do not make right."



Full Keyboard.



Two types of 10-key Keyboards.

All adding machines related to this subject follow the same general mechanical principle to accomplish addition, in that the motion of the mechanism actuating the accumulating gears is controlled by stops set from the keyboard. In full keyboard machines, these stops are set, usually, in a fixed frame directly under the keyboard. There are nine stops in each column, set directly from the keys.

In ten-key construction there are also nine stops for each column, arranged in a frame, (hereafter called the stop-carriage), in which the stops are set. This frame is located far inside the mechanism and is often referred to as the heart of the machine. The stops in this carriage are set in one of two ways; either the stop carriage moves to bring the stops for each column in line with a fixed setting mechanism, or the stop-carriage is fixed and the setting mechanism is moved to the column position of the stop-carriage.

In the first of these types of ten-key machines, the stop-carriage is movable and is in many respects similar to the carriage on a typewriter. It travels progressively from right to left as the numeral key for each column is set from a keyboard, in the same way that a typewriter carriage travels from right to left each time a key is struck. When an amount key is depressed on the keyboard of a ten-key machine, the stop-carriage moves to the first column position and the stop representing that amount key is raised in the first column of the stop-carriage. Each time an additional key is depressed, the stop-carriage moves another place, to the capacity of the machine. After the amount is added (by pulling the operating crank), the stop-carriage returns to a normal position ready for the first column set-up of another item.

**Example:** Supposing the amount 35 is to be set-up: when the 3 key is depressed the stop-carriage which is at the normal position, moves to the left one place to the first column position and the number 3 stop in the first column is projected. When the 5 key is depressed, the stop-carriage again moves, one place to the left bringing the second column of stops to the point previously held by the first column, and moving the first column to the left, making it, in decimal order, the tens column. At the same time the 5 stop in the second column (now the unit column) is projected.

## ANALYSIS OF TEN-KEY AND FULL KEYBOARDS—continued

When the crank is pulled, the printing and accumulating mechanism is brought to rest against the stops that are set in each column, and on the return stroke of the handle the carriage returns to its first position.

The movement of the stop-carriage can be visualized by placing a sheet of paper in a typewriter, and typing the numeral 3 It will be noticed that the carriage moves one space to the left, and if the numeral 5 is then typewritten, the carriage will move to the third position, ready for further figures if desired. This is similar to the way that the amount to be added is **set-up** in the stop-carriage of a ten-key machine, and when the machine is operated, 35, therefore, is added in its proper columnar position.

The same thing happens under the keyboard of a full-key adding machine, except that instead of there being a traveling stop-carriage the frame holding the stops is fixed, and to secure the proper columnar relation, the hand is moved on the keyboard to the numeral key in each column.

On another design of ten-key machine, the stop-carriage is stationary and the setting mechanism consisting of an arm and fingers for each numeral, moves to the column position and sets the stops in each column of the stop-carriage progressively from left to right, as the keys on the keyboard are depressed.

It will, therefore, be seen that the difference in design insofar as the principle controlling the interior mechanism of the machines is concerned, is very similar—one method is similar to that of the typewriter, using ten keys over and over again to set-up an amount on a stop-carriage; the other utilizes a separate key in each column to likewise set-up the amount by a direct process.

The construction of ten-key machines is such that visible total dials are not possible. The accumulator gears are in the heart of the adding mechanism and no way has so far been found to bring them to a visible position.

The following are the principal points emphasized by the different manufacturers:

### Emphasized Points of Full Keyboard Construction

1—The keyboard is arranged like a sheet of paper ruled into vertical columns.

2—Figures can be written in any sequence, that is, backward, forward or from the middle out.

3—Ciphers are automatic, printing in their proper number and column relation to the figures in the item, without any attention from the operator.

4—Check of items is afforded. Amounts set up on the keyboard are visible and figures can be read from the keyboard before adding. Correction of an amount made on the keyboard is likewise visible.

5—One figure of set-up can be corrected without disturbing others.

6—Combinations of keys can be set by a single depression, as many as three or four or more, at a time.

7—Items of consecutive numbers can be set-up by changing, through the flexible feature of the keyboard and the use of the repeat key, the last number only.

## ANALYSIS OF TEN-KEY AND FULL KEYBOARDS—continued

8—Affords an instantaneous imaginary split keyboard at any desired column.

9—Affords visible dials (adding wheels) which make the machine independent of paper or ribbon; also serves to inform operator at all times of accumulated amount of total; facilitates series multiplication and division.

10—Repeat key not necessary in simple multiplications; keys may be kept depressed by pressure of the fingers.

### Emphasized Points of Ten-Key Keyboard Construction

1—Places figures in a horizontal line without thought by the operator.

2—No column order selection necessary; no columns to locate, places all figures in their logical order with less effort than writing.

3—No arm movement necessary in depressing keys in each column, hand stays in one position and fingers only are moved, hence, less travel from key to key and less time consumed in making set-up.

4—A natural touch system, easy for the operator to learn; there being ten keys only, hence easier to study and become familiar with their positions, than it would be to memorize the position of a key for each column.

5—Offers a standardized keyboard not dependent upon the capacity of the machine; machines having 6, 7, 9 or 11 columns would all have the same number of operating keys, in the same positions, making it possible for an operator to change from one machine to another without confusion.

6—Follows the usual customs and practices in that a typewriter has but ten numeral keys, likewise a billing machine, bookkeeping machine, tabulating machine, and a linotype machine.

7—Visibility of set-up not important; typewriters being universally accepted as standard, have only one key for each letter of the alphabet. The operator knows when striking a key with a certain designation on it, that it will print that character and none other. Likewise the operator knows when depressing the key on a ten-key keyboard machine which does not show afterward which key was depressed, that the numeral struck is the numeral that will be added and printed.

8—Number dials are not important, as evidenced by the fact that the highest priced full keyboard machines have dials below the range of vision; that the highest priced bookkeeping machine is not equipped with visible total dials. That it is easier and more desirable to take a sub-total and thus have a permanent record of the amount in the machine than to rely on the temporary record furnished by the total dials.

9—Cipher key, in multiplication, acts as an automatic shift, obviating the necessity of re-setting the multiplicand.

10—Back space key allows changing the denomination of any item without resetting it, (such as to change 3450 to 345). Problems in division are greatly facilitated and the need of resetting the divisor is eliminated by the use of the back spacer.

# ACCURACY TEST FOR ADDING MACHINES

The test as shown below is one of the standard tests used by adding machine manufacturers to determine the accuracy of the registering and carrying mechanisms of their machines. It may be used to test listing or non-listing machines of any number of columns' capacity. If a study of these tests is made, it will be found that they follow a definite scheme making it easy to commit the formula to memory.

## Adding Test

Clear Machine.....*

Set Up: 9

.9 8

9 .8 7

9 8 .7 6

9 8 7 .6 5

9, 8 7 6 .5 4

9 8, 7 6 5 .4 3

8 7, 6 5 4 .3 2

7 6, 5 4 3 .2 1

6 5, 4 3 2 .1 0

5 4, 3 2 1 .0 0

4 3, 2 1 0 .0 0

3 2, 1 0 0 .0 0

2 1, 0 0 0 .0 0

1 0, 0 0 0 .0 0

1 0, 0 0 0 .0 0

1 1, 1 1 1 .1 1

2 2, 2 2 2 .2 2

3 3, 3 3 3 .3 3

4 4, 4 4 4 .4 4

5 5, 5 5 5 .5 5

6 6, 6 6 6 .6 6

7 7, 7 7 7 .7 7

8 8, 8 8 8 .8 8

9 9, 9 9 9 .9 9

1 0, 0 0 0 .0 0

1 0, 1 0 1 .0 1

2 0, 2 0 2 .0 2

3 0, 3 0 3 .0 3

4 0, 4 0 4 .0 4

5 0, 5 0 5 .0 5

6 0, 6 0 6 .0 6

7 0, 7 0 7 .0 7

8 0, 8 0 8 .0 8

9 0, 9 0 9 .0 9

Take sub-total 1, 4 7 4, 5 4 5 .3 5

Take total 1, 4 7 4, 5 4 5 .3 5

This amount should print and show in dial wheels.

## Cipher Test

Clear Machine .....*

Set Up: 1, 0 0 0, 0 0 0 .0 0

1 0 0, 0 0 0 .0 0

1 0, 0 0 0 .0 0

1, 0 0 0 .0 0

1 0 0 .0 0

1 0 .0 0

1 .0 0

.1 0

1

Take total 1, 1 1 1, 1 1 1 .1 1

This amount should print and show in dial wheels.

## Carrying and Clearing Test

Average: Set-up 9, 9 9 9, 9 9 9 .9 9

Set-up 1

and operate machine at average speed. Machine should clear.

Slow: Set-up 9, 9 9 9, 9 9 9 .9 9

Set-up 1

and operate machine as slow as possible. Machine should clear.

Fast: Set-up 9, 9 9 9, 9 9 9 .9 9

Set-up 1

and operate machine as fast as possible. Machine should clear.

## GENERAL FEATURES OF ADDING MACHINES

Throughout the descriptions, the following features are listed for practically all models. While an understanding of their use and application is generally known, the following brief explanation may be of use to the uninformed:

**The total key** (abbreviated "T"), is an auxiliary or control key, depressed when it is desired to print a total on a listing type of adding machine. Non-listing and calculating types do not have a total key.

On some makes, the total key also serves as a general correction key. When it is depressed any keys that may be set on the keyboard are restored to a normal, inoperative position. The operation of the total key clears (resets) the adding counter to zero; although some machines have an extra control device for clearing.

**The sub-total key** (abbreviated "ST"), operates the same as a total key, except that it is used when it is not desired to clear the accumulator wheels at the same time the total is printed. After printing the total, the amount remains in the machine so that additional items may be added to it to make a grand total.

**The non-add key** (abbreviated "NA"), is an auxiliary key on listing adding machines, providing for the printing of an item without adding it. It is used principally for the insertion on the tape of dates and numerals representing memoranda of various kinds.

**The non-print key** (abbreviated "NA"), is a control equipment on listing adding machines, providing for the adding of an item without printing it. Present day designs provide for the automatic disengagement of the paper spacing mechanism when this key is used.

**The general correction key** (abbreviated "C"), on listing, non-listing or calculating types, restores all keys of a set-up on the keyboard that have been depressed in error.

**Separate column release keys,** on listing, non-listing or calculating types are mounted in a row one under each column of the keyboard, and provide for the correction by individual columns of amounts set-up in error.

**Repeat key,** provides for locking down the keys that are depressed on the keyboard so that when the machine is operated again, the amount will be repeated. Used principally in performing multiplication.

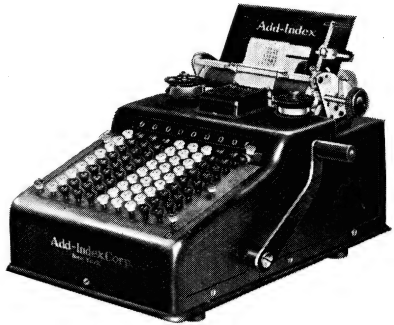
**Split feature** comprises means, distinctive with each maker, for splitting the printing mechanism into two sections so as to provide for the listing of two columns simultaneously, one on each side of the keyboard, and printing a total of one or both sides.

**The section describing calculating machines has been placed immediately after this section instead of following in alphabetical order. This arrangement has been made for convenience and because calculating machines are very often referred to as adding machines.**

## ADD-INDEX

Made by the Add-Index Corporation. General offices: 120 Broadway, New York City. Sold through their own sales force.

A compact, full button-key keyboard, visible adding and listing machine, handle operated. Made in narrow and wide carriage models.




### Specifications

**Dimensions:** All models weigh approximately 25 pounds and have the same base size of 10x14 inches.

**Keyboard:** Standard, full button-key, flexible, with complements for subtraction.

**Control keys:** Non-print, non-add, repeat, correction and combination total and sub-total. Machine is cleared when a total is taken.

**Carriage:** Narrow, fixed, 5 inches wide for handling tape and small statement sheets; wide carriages are movable, accommodate paper 8½ inches wide and are equipped with spring actuated tabulator, operating from a lever controlled by the right hand; all carriages are interchangeable; have single, double or non-space adjustments.

**Visibility:** The amount of set-up is visible on keyboard; the accumulated amount is shown on dials, and items and totals are visible as they are printed.

**Printer:** Two color; automatic ribbon reverse, totals and sub-totals printed in red; the first item always prints in red if machine is clear; non-add items designated by printing of cipher in extreme left hand column.

**Auxiliary Single Dial** situated at base of keyboard operates from repeat key, furnishing the third factor of multiplication.

### Models and Prices

| Models | Description | Price |
|---|---|---|
| No. 670, | 7 item and total columns, 5-inch fixed carriage | $125.00 |
| No. 680, | 8 item and total columns, 5-inch fixed carriage | 150.00 |
| No. 690, | 9 item and total columns, 5-inch fixed carriage | 175.00 |
| No. 691, | 9 item and total columns, movable wide (8½-inch) tabulating carriage | 200.00 |
| Extra for | wide tabulating carriage, interchangeable on narrow carriage models | 25.00 |
| Extra for crystal finish | | 25.00 |

## AMERICAN (Calculating Model)

Formerly made by the American Can Company, Chicago, Illinois. Now sold by the American Adding Machine Company, 35 South Dearborn Street, Chicago, Illinois, direct and by salesmen, agents and dealers.

This machine, distinctive in design and operation, is equipped to handle all four divisions of figuring. It is lever set, handle operated, non-listing and visible in all its operations. Totals appear in dials over the keyboard and an extra single dial below the keyboard, records and shows the number of times an item is repeated (the third factor in multiplication).



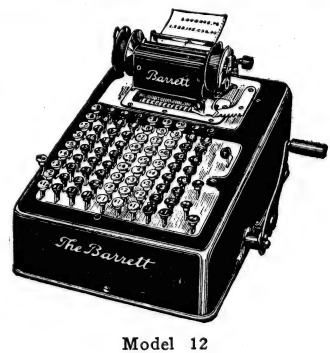

### Specifications

**Dimensions:** Base size 7½ by 9½ inches by 9 inches high. Weight 17 pounds. **Keyboard** is distinctive, being arranged in seven columns having a corrugation or depression for each number position. The index finger is placed in the corrugation on the number to be set up and the lever for that column raised by the thumb until it is stopped by the finger. The lever stays in set-up position and indicates the set-up. Complements are marked on the keyboard for subtraction. **Control equipment** consists of correction and repeat (multiplying) levers. A blank stroke of the operating handle clears the machine. Model No. 5 7-item columns, 8 places in total, black enamel finish..$39.00

## BARRETT

Made by the Lanston Monotype Machine Company, Philadelphia, Pa. Sold through their own salesmen.

A portable machine, for adding, listing and calculating, having a full flexible keyboard, and is key set and crank operated. All controls are operated by one (the right) hand. All operations are visible. While all models will handle all four divisions of figuring, Model 12 is specially constructed to provide increased speed and facility of operation in multiplication and division. It has what is called a "Calculating Device" which by a lever arrangement at the top of the keyboard, allows the adding wheels to be shifted to right or left in performing multiplication and division, leaving the keyboard set up unchanged to the end of the transaction. The design of all models allows an item to be non-added after being printed (and before the back




**Model 12**

## BARRETT—continued

stroke of the operating handle is completed), or a total to be changed to a sub-total after printing.

### Specifications

**Portability:** All models weigh less than twenty-four pounds and have the same base size of 9x12 inches. **Keyboard:** Standard full key, flexible, equipped with complements for subtraction. **Control Keys:** Total, sub-Total (on one key), Repeat, Error, non-Add and non-Print keys are standard equipment on all models. All control keys are operated by the right hand. **Printing:** One color only; automatic ribbon reverse. **Carriage:** Fixed narrow size only, taking standard narrow width roll paper. **Visibility:** The amount of set-up is visible on keyboard; accumulated amount is shown on dials and items and totals are visible as they are printed. **Signals:** Each item as it is listed is followed by a check mark, which also serves as a "clear" signal, except non-add items are not checked. In the blank stroke before taking total, this check mark appears for a sub-total and does not show if a total is being taken. The taking of the total clears the machine.

### Models and Prices

| Model | Keyboard Capacity | Total Capacity | Price |
|---|---|---|---|
| 5 | 5 cols. | 6 cols. | $125.00 |
| 7 | 7 cols. | 7 cols. | 175.00 |
| 7-A | 7 cols. | 8 cols. | 200.00 |
| 9 | 9 cols. | 9 cols. | 225.00 |
| 9-A | 9 cols. | 10 cols. | 250.00 |
| 9-B | 9 cols. | 11 cols. | 275.00 |
| 9-C | 9 cols. | 12 cols. | 300.00 |
| 12 | 9 cols. | 12 cols. with calculating device | 325.00 |
| 7¼ | 6 cols. plus fourth fractions. | 6 cols. with fourth fractions. | 190.00 |
| 7⅛ | 6 cols. plus eighth fractions. | 6 cols. with eighth fractions. | 190.00 |
| 9¼ | 8 cols. plus fourth fractions. | 8 cols. with fourth fractions. | 240.00 |
| 9⅛ | 8 cols. plus eighth fractions. | 8 cols. with eighth fractions. | 240.00 |

**Single Counter Adding Machines:**

All makes except those included in the following three classes:

**Duplex, (2-counter) machines:**

Burroughs, Class 2 Models
Ellis, Duplex Models
Wales, Model 30
Wales, Portable Duplex Models

**Direct Subtracting Machines:**

Burroughs Class 6 Models.
Ellis, Duplex Models
Federal, Model B
Sundstrand, Direct Subtractor Models
Wales, Model 30

**Statement Machines, (with calendar keys):**

Burroughs
Dalton
Federal, Model B
Sundstrand
Wales

# BURROUGHS

**(See also Bookkeeping Machines and Calculating Machines)**

Made by the Burroughs Adding Machine Company, Detroit, Michigan. Sold by their own specially appointed sales force through agencies located throughout the country.

Burroughs machines comprise models and designs for practically every figuring purpose. They are divided into four general groups as follows:

**Group A:** Adding machines comprising all adding and listing machines with ten columns of keys or less.

**Group B:** Bookkeeping machines comprising all Burroughs adding and listing machines with eleven columns of keys or more.

**Group C:** Calculating machines comprising all (non-listing) calculating machines.

**Group D:** Moon-Hopkins billing and bookeeping machines.

For greater convenience in classifying the different types of machines, they are again divided into seven classes as follows:

**Class 1**—Single counter, high keyboard, blind printing, adding and listing machines.

**Class 2**—Two counter (duplex), high keyboard, blind printing, adding and listing machines.

**Class 3**—Single counter, low keyboard, visible printing, adding and listing machines.

**Class 4**—Single counter low keyboard, visible printing, adding and listing machines, with special equipment for speed and convenience in multiplying.

**Class 5**—Key driven, non-listing calculating machines.

**Class 6**—Single counter, high keyboard, blind printing, adding, listing and direct subtracting (bookeeping) machines.

**Class 7**—Moon-Hopkins combination adding, listing and multiplying machine and typewriter.

All machines in any of the above classes will perform subtraction, multiplication and division as well as addition with the same facility as is found on any make of machine of their type.

## General Specifications

**Keyboards:** All Burroughs machines utilize the full button-key keyboard. Low style visible printing machines are equipped generally with flexible keyboards, while the high type blind printing models have separate column release keys. Standard keyboards are not equipped with complementary numbers on the keys for subtraction.

**Printing:** On high models No. 1 and No. 2, one color, through a wide ribbon; automatic reverse. On low type, visible printing models, one or two colors (as per specifications), through a narrow ribbon; automatic reverse.

## BURROUGHS—continued

### Description of Features

On machines of Classes One and Two, many of the features described below, such as non-add, split and date, are controlled and made operative in definite column positions, by means of adjustable stops actuated by the movement of the carriage. This automatic control is usually desirable on machines equipped with shuttle, automatic or semi-automatic cross tabulating carriages.

Standard Features:

**Printing:** One color; automatic ribbon reverse.

| | Classes One and Three | Class Two—Upper Counter | Class Two—Lower Counter |
|---|---|---|---|
| 1—**Total key,** prints signal | * | * | * |
| 2—**Sub-total key,** prints signal | S | S | S |
| 3—**Non-add key,** prints signal | # | # | # |

4—**Separate column release keys** for individual column correction of error in set-up.
5—**Error key** for general correction of error of set-up.
6—**Repeat key** for repeating an item and for multiplying.
7—Tubular iron stand.

Features, Standard or Optional, as specified in the description of models:

8—**Unlimited Split (US)** .....Standard equipment where specified. Provides for splitting printing between any two columns of keys. Controlled from a group of small levers situated above the keyboard.

9—**Movable 12¼" carriage (12¼" LB).** Standard equipment where specified Low back (short paper table) taking paper 12¼" wide.

9A—**Movable 18" carriage (18" HB)**..Optional equipment, extra....$25.00 Equipped with high back (extended paper table) taking paper 18" wide.

9B—**Semi-automatic cross-tabulating carriage (SACT)**.....
.....Standard equipment where specified. Takes paper 12¼" wide. Tabulates from right to left to column positions, automatically, as items are added and printed. Equipped with adjustable tabulator stops, to set stopping positions for columns.

9C—**Shuttle carriage (SC)**.....Standard equipment where specified. Otherwise optional .....extra $65.00 Takes paper 12¼" wide. Moves automatically each time machine is operated, to print items alternately in adjoining right and left columns. Spaces in one column position only.

9D—**Motor Return Carriage (MRC).** Standard equipment where specified. An SACT carriage equipped with a device, operated by the motor drive to return the carriage automatically to the printing position for the first item of a posting. It is controlled by a stop on the tabulator mechanism.

9E—**Split and Normal platen (S&NP)**..Optional equipment, extra..$50.00 A 12¼" platen constructed so that it may be used at will as a 12¼" unit or converted into two sections, 3¾" on the left and 8½" on the right with independent paper feeds on both sides. Paper on one side can be fed for each item, and on other side may feed for totals only.

## BURROUGHS—continued

9F—**Split Platen (SP)**.....Optional equipment, extra..$100.00
An 18" platen split permanently into two sections, the left hand section taking paper 6" wide and the right hand section taking paper 12" wide. Equipped with separate paper feed for each section and both right and left hand injector and ejector equipment. It cannot be used as an 18" unit. Paper on one side can be fed for each item, and on other side may feed for totals only.

10—**Date, Count and Normal Device (DC&N)** .....
.....Optional equipment, extra..$25.00
Provides for using the last two or three columns of capacity, for counting number of items listed, or for inserting date or similar memorandum. Controlled from three-position indicator at front of keyboard. When set at "Count," the adding and totaling capacity is reduced two or three columns; a count is automatically made of the number of items added and when the total of amount is printed, the number of items is printed to the left. When set at "Date," the date numerals may be set up and when the total is taken no total will show under date columns. When set at "Normal," the machine adds and totals to full capacity.

10A—**Date and Normal Device, (D&N).** Standard equipment on some Class Three models similar to Date, Count and Normal Device, except it does not provide a count.

10B—**Split and Normal Device, (S&N),** Standard equipment on some Class Three models. Controlled by a two position indicator at front of keyboard. Provides for splitting the machine into two sections, at will, for separate adding and totaling of items on both sides of keyboard.

11—**Fractions**.....Optional equipment, extra..$25.00
Eighths, twelfths or sixteenths.

12—**Injector and Ejector, (I&E)**....Standard equipment where specified.
Otherwise optional, extra.....$20.00
A lever on one end of the carriage, operating in connection with the paper feed mechanism, to afford speed and convenience in inserting and ejecting forms. Equipped with adjustments for uniform measured feed, for inserting statements, etc., to the correct position for printing first item.

13—**Electric Drive** .....Standard equipment where specified.
Otherwise optional .....extra $115.00

14—**Transfer Total Key**.....Standard equipment on Class Two models.
Prints signal "T". Transfers a total from upper to lower counter, and at the same time clears upper counter. The totals so transferred are added together in the lower counter automatically as transferred, to form a grand total, which may, at any time, be printed.

15—**Calendar Keys, (SKS)**.....Standard equipment where specified.
Otherwise optional .....extra $25.00
Special columns of keys having abbreviations for months and for numerals for days, and the characters, Dr., Cr., and Bal.

16—**Date Repeat Key**.....Standard equipment where specified.
Otherwise optional .....extra $25.00
Locks down to repeat date automatically.

17—**Carriage Return Key**.....
.....Standard equipment with motor return carriages only.
When depressed, the carriage will return to position to print the first item of a new combination. This key is used as an auxiliary feature to the automatic carriage return, should it be desired to return the carriage before it has completed its cross-tabulation and reached the stop which controls and actuates the automatic return.

18—**Red Ribbon Mechanism**.....
.....Standard equipment on some Class Three models.
Prints totals and non-add items in red; other items in black.

## BURROUGHS—continued

### Specifications Class One:

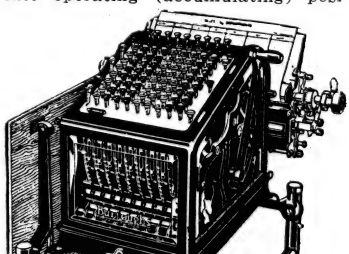
High Construction; blind printing, visible total dials. Designed for straight adding and listing and for bank transit work. Hand or electrically operated.

Models of this class have the carriage mounted on the rear, hinged so as to swing away from the printing point when it is desired to inspect the work. Items are visible from the keyboard set-up before being added but are not visible as printed. Accumulated totals are visible in dials through the lower glass panel at the front of the machine.

Numbers of folios, bank ABA block numbers, dates, etc., may be set up on the regular adding keys on the keyboard and non-added automatically through the operation of stops, when the carriage is tabulated to the correct column position. The arrangement is usually included when machines are equipped with shuttle, automatic or semi-automatic cross tabulating carriages.

### Specifications Class Two:

Two counter, (duplex), adding and listing machines. High construction, glass sides, blind printing, visible totals (of one counter only). Items are visible from the keyboard set-up before being added but are not visible as printed. Equipped with two adding counters (upper and lower), to allow two separate totals to be accumulated simultaneously. A lever on the keyboard throws either counter into operating (accumulating) position. Both counters cannot be active at one time. While one counter is in position to add, the other counter is inactive. A total, after being accumulated in the upper counter, may then be transferred to, (stored in), the lower counter to make a grand total. As the transfer is made, the upper counter is cleared. Thus, items representing individual groups may be added in the upper counter and totaled, and each group total then transferred to the second counter to provide a grand total of all group totals. Special countrols are provided to permit of alternate adding of items in the upper and lower counters. The counter in which each transaction has occurred, is denoted by distinctive signals printed in connection with the use of all control keys.



**A Typical Class 2 Model Class One Models Are Similar in Appearance**

The printing and automatic non-adding of folio, numbers, dates, etc., is accomplished automatically as the carrige is tabulated, in the same manner as described for Class 1 machines.

## BURROUGHS—continued

### Specifications Class Three

Low type, visible printing, visible total dials. semi - portable; hand or electrically operated. These are the standard models of the Burroughs line, sold for all ordinary commercial work.

**Control keys:** Total key (also serves as a general error key), sub-total key, repeat and non-add key. Machine is cleared when a total is taken.

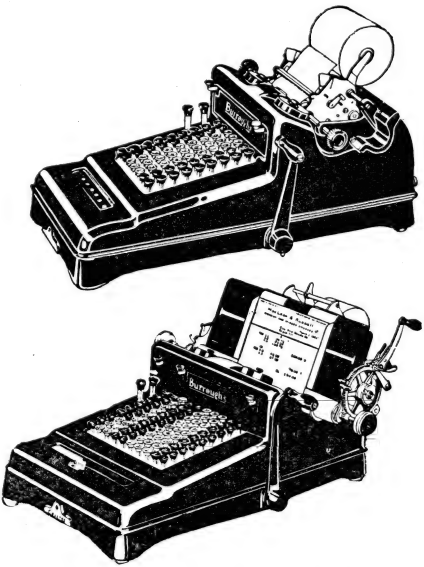
**Carriage:** Narrow or wide. (See price list. The sizes shown represent the width of paper that can be accommodated.) On machines of this class, carriages are not interchangeable; each carriage style and width represents a different model, thus affording optional styles in all essential variations.

Narrow carriages are fixed; wide carriages are movable and equipped with tabulator stops. All carriages have one, two and three line space adjustment and paper release.

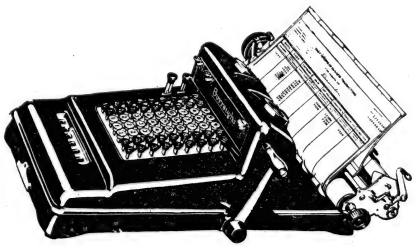
All movable carriages are manually shifted. Models of this class cannot be equipped with shuttle, automatic, semi-automatic or motor return carriages.

**Visibility:** The amount of set up is visible on the keyboard; accumulated amount is shown in dials directly below the keyboard and items and totals are visible as they are printed.

For details of other features, see paragraph "General Specifications" above, and price list.



Top: A Typical Class 3 Model
Below: A Statement Model



A Class 3 Wide Carriage Model

## BURROUGHS—continued

### Class Four

Similar to Class No. 3 machines with a device known as the Multiplying Keyboard, comprising a lever to shift the multiplicand from right to left or left to right, while multiplying. Key tops have complementary numbers.

Control equipment consists of total key, printing signal *; sub-total key, printing signal S; repeat key; non-add key, printing signal #; non-print key; separate column release keys.

Printing: Visible, Two-color ribbon; printing totals, sub-totals and non-add items in red.

Carriage: 12-inch movable carriage, equipped with bell item counter.

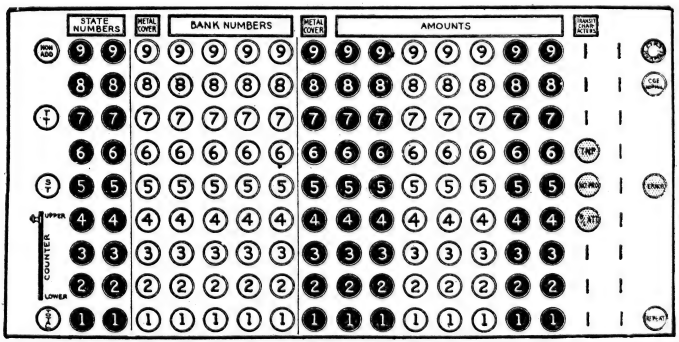


### Models and Prices

Model No. 4304 (Old Model No. 434) 10 column listing and totalling capacity .....$425.00
Extra for electric drive 115.00

### Class Five

Key-driven calculating machine. See Section "Calculating Machines".




Keyboard Arrangement of Class Two, Model 2703.

# BURROUGHS

## Models and Prices: Class One, High Type, Single Counter, Blind Printing

**Standard Features of all Models:** Total key; sub-total key; non-add key; error key; repeat key; separate column-release keys.

S—denotes Standard Equipment  O—denotes Optional Equipment

| | | | | | | |
|---|---|---|---|---|---|---|
| **New Model No.** | 1201 | 1203 | 1205 | 1401 | 1701 | 1703 |
| **Old Model No.** | (126) | (126-SACT) | (126-TSC) | (146) | (176) | (176-T) |
| **Keyboard Columns** | 9 | 9 | 9 | 11 | 17 | 17 |
| **Total Columns** | 9 | 9 | 9 | 11 | 17 | 17 |
| **Carriage: M-12¼″** | S-LB | {Bank Transit Model}† | {Bank Transit Model}† | S-LB | S-HB | {Bank Transit Model}‡ |
| **M-18″** | O-HB | | | O-HB | O-HB | S-HB |
| **SC-12¼″** | | | S-HB | | | |
| **SACT-12¼″** | | S-HB | | | | |
| **Injector and Ejector** | O | S | S | O | S | S |
| **Unlimited Split** | | | | | S | S |
| **Date, Count and Normal** | | | | O | | |
| **Fractions: 8-ths, 12-ths or 16-ths** | O | | | O | O | |
| **Electric Drive** | O | O | O | O | S | S |
| **Price: Hand operated** | $325.00 | $350.00 | $350.00 | $450.00 | | |
| **Motor driven** | 440.00 | 465.00 | 465.00 | 565.00 | $770.00 | $820.00 |

† denotes Non-add and split feature is carriage controlled. In Non-add position split for ciphers between 2-3 and 7-8 columns. In add position, or when carriage is normal, totaling and listing capacity is nine columns.

‡ denotes equipped with special characters in first and second columns: TNP, (Telegraph Non Payment); No Pro. (No Protest); B/l Att. (Bill of Lading Attached). HB or LB denotes high back or low back carriage.

# BURROUGHS

## Models and Prices: Class Two, Duplex Models

**Standard Features of all Models:** Total key; sub-total key; transfer total key; non-add key; general error key; repeat key; separate column release keys.

S—denotes Standard Equipment O—denotes Optional Equipment

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **New Model No.** | 2201 | 2203 | 2401 | 2403 | 2406 | 2408 | 2701 | 2703 |
| **Old Model No.** | 226 | 226-SC | 246 | 246-SC | 246-G MRC | 246-H MRC | 276 | 276-T |
| **Keyboard Columns** | 9 | 9 | 11 | 11 | 11 | 11 | 17 | 17 |
| **Total Columns** | 9 | 9 | 11 | 11 | 11 | 11 | 17 | 17 |
| **Carriage: M-12¼"** | S-LB | | S | | | | | { Bank Transit Model }‡ |
| **M-18"** | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | |
| **SC-12¼"** | | S-HB | O | S-HB | | | S-HB | S-HB |
| **SACT-12¼"** | | | | | S-HB | S-HB | | |
| **MRC** | | | | | S | S | | |
| **Date Repeat Key** | | | | | | S | O | |
| **Calendar Dater** | S | S | O | | | S | O | |
| **Split Platen 18"** | | | | | O | O | | |
| **Split and Normal Platen 12¼"** | | | | | O | O | | |
| **Injector and Ejector** | O | O | S | S | S | S | S | S |
| **Unlimited Split** | | | | S | S | | S | S |
| **Date, Count and Normal** | | | O | | | | | |
| **Fractions: 8-ths or 12-ths** | O | O | O | O | O | O | O | |
| **Electric Drive** | O | O | O | O | S | S | S | S |
| **Price:** Hand Operated | $375.00 | $440.00 | $520.00 | $620.00 | | | | |
| Motor Driven | 490.00 | 555.00 | 635.00 | 735.00 | $885.00 | $900.00 | $910.00 | $910.00 |

‡ denotes equipped with special characters in first and second columns; TNP, (Telegraph Non Payments); No Pro. (No Protest); B/l Att. (Bill of Lading Attached).

HB or LB denotes high or low back carriage.

# BURROUGHS

## Models and Prices: Class Three, (Visible Models)

Abbreviations used are:

**Capacity:** The first figure denotes number of keyboard columns; the second figure denotes number of places in total; the fraction after the designation for total capacity indicates total of fraction column. **Carriage:** Style F denotes Fixed; style M denotes Movable. **N P Key** denotes non-print feature. **D C & N** denotes Date, Count and Normal device. **D & N** denotes Date and Normal device (does not total to left of split). **S & N** denotes Split and Normal (totals to left of split). **Calendar Keys** denotes Date and month keys for statements. **HB** after carriage size denotes High (paper table) back. (For full descriptions of features see "Descriptions of Features" on preceding pages.)

**Standard Features:** Total and error key (combined); sub-total key; non-add key; repeat key.

| Model No. New | Model No. Old | Capacity | —Carriage— Paper Width | —Carriage— Style | —Carriage— Fractions | Ribbon | N. P. Key | D. C. & N. | D. & N. or S. & N. | Calendar Keys | Elec. Drive | Price Hand Operated |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3001 | (301) | 5-6 | 4″ | F | | 1-col | No | | | | No | $125.00 |
| 3119 | | 7-6⅞ | 4″ | F | ⅛ | 1-col | No | lto99 | | | No | 200.00 |
| 3122 | | 7-6⅞ | 12″ | M | ⅛ | 2-col | Yes | lto99 | | | No | 250.00 |
| 3105 | (315) | 7-7 | 4″ | 2-pos. | | 1-col | No | | | | No | 175.00 |
| 3118 | (5108) | 7-7 | 12″ | M | | 2-col | Yes | | | | No | 225.00 |
| 3221 | | 9-8⅞ | 4″ | F | ⅛ | 2-col | Yes | lto999 | | | Opt. | 275.00 |
| 3217 | (3201) | 9-9 | 4″ | F | | 2-col | Yes | | | | Opt. | 250.00 |
| 3218 | | 9-9 | 12″ | M | | 2-col | Yes | | | | Opt. | 300.00 |
| 3222 | | 9-8⅞ | 12″ | M | ⅛ | 2-col | Yes | lto999 | | | Opt. | 325.00 |
| 3321 | | 10-9⅞ | 4″ | F | ⅛ | 2-col | Yes | lto999 | | | Opt. | 325.00 |
| 3322 | | 10-9⅞ | 12″ | M | ⅛ | 2-col | Yes | lto999 | | | Opt. | 375.00 |
| 3320 | (3305) | 10-9 | 12″ HB† | M | | 2-col | Yes | | D. & N. | Yes | Opt. | 400.00 |
| 3326 | | 10-811/12 | 12″ | M | 1/12 | 2-col | Yes | lto9999 | S. & N. | | Opt. | 375.00 |
| 3323 | | 10-10 | 4″ | F | | 2-col | Yes | lto999 | | | Opt. | 325.00 |
| 3317 | | 10-10 | 4″ | F | | 2-col | Yes | | | | Opt. | 300.00 |
| 3325 | | 10-811/12 | 4″ | F | 1/12 | 2-col | Yes | lto9999 | S. & N. | | Opt. | 325.00 |
| 3318 | (3304) | 10-10 | 12″ | M | | 2-col | Yes | | | | Opt. | 350.00 |
| 3324 | | 10-10 | 12″ | M | | 2-col | Yes | lto999 | | | Opt. | 375.00 |

Add for electric drive, on models noted optional, $115.00.

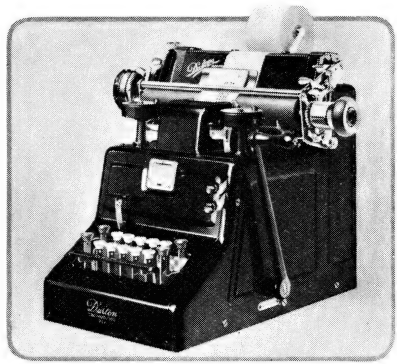
† denotes statement model, with characters for months in last two left hand columns. Adding capacity when printing dates, 7 columns, without printing dates 9 columns. Carriage is equipped with Injector and Ejector, (See feature 12).

## DALTON

(See also Bookkeeping Machines and Combination Registers)

Made by the Dalton Adding Machine Company, 263 Beach Street, Norwood. Cincinnati, Ohio. Sold by their own sales force.

A ten-key adding and listing machine, key set, crank (hand or motor) operated. The present line, called the Super Model Series, was placed on the market in May, 1921, and represents an improvement in design, operation, versatility and functioning on other ten-key principle models manufactured by the same company, continuously since 1902. The principal improvements embodied in Super Models are: all-steel unit construction including base, side frames and case, effecting a saving in these parts of 21 pounds in weight; an increased weight of 14 pounds to the working parts, making a net saving in total weight of 6 pounds; reduction of base dimensions to 8x14 inches; square instead of round main shaft; all springs equipped with steel eyelets; one-piece construction of adding wheel; Damaskeen finish of exposed parts of frame, etc.



Super Model

Made in a total of 152 models, divided into different series groups according to construction and equipment, for adding and listing, calculating, bookkeeping, statements and cross tabulating purposes, including fraction machines and models equipped for handling British currency denominations.

### General Specifications of All Models

**Dimensions:** Base size of all Super Models, 8 inches wide by 14 inches long; weight, with 6 inch movable paper carriage, 32 pounds; weight of other models in proportion dependent upon carriage and equipment.

**Keyboard:** 10 numeral keys, arranged in two horizontal rows, marked with complements for subtraction. Feature Keys, (non-add, non-print, etc.) are positioned at either side of keyboard; correction-bar mounted above and to left of keyboard; individual total and sub-total keys mounted above and to right of keyboard. Electrically operated models have full length touch bar at bottom of keyboard.

**Carriage:** Made in various sizes to accommodate paper 6 to 30 inches wide; equipped as shown below.

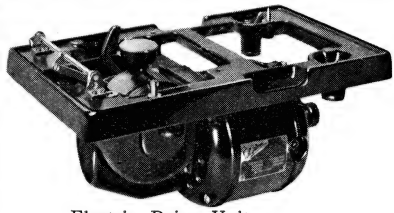
**Printing:** Visible, two-color with automatic ribbon reverse. Total key prints * symbol; non-add key prints √ symbol, sub-total key prints S symbol; subtraction key prints — symbol.

**Subtraction Feature:** Red figures (complements) are depressed for the exact amount to be subtracted and subtraction key is depressed. Subtracted items are not printed but the minus sign is shown on all such operations. If it is desired to print the item to be subtracted, it is first printed and non-added.

## DALTON—continued

**Operating Equipment:** Consists of separate total and sub-total keys, located above and to right of keyboard; subtraction key; non-add key; back space key (for correcting error in setup, one column at a time, or for use in multiplication); repeat key (locks down); correction key (or bar) located above and to left of keyboard; non-print key (locks down); keyboard clear signal, directly above keyboard indicates progressively, the number of columns occupied during the set-up of each item. General lock operates to lock, automatically, all numeral keys and all operations of machine while other functions are being performed, to prevent damage or errors in mis-operation. Variable split device (on all models except Little Giant Series) provides for simultaneous adding in two columns. 11 and 13 column models may be equipped with a tabulating key for automatically shifting the carriage for double column work; a constant key for holding a constant factor in the machine during several multiplication calculations; three factor multiplication mechanism to print the three factors of multiplication without showing the entire progress in addition on the strip.

**Electric drive** is a separate unit; equipped with automatic stop and start; designed for use with any model; no attaching mechanism being necessary. The adding unit is lifted on or off the drive unit as required.



Electric Drive Unit

## Carriages

Model 100 for 10-inch paper, movable and interchangeable; mounted on roller bearings; equipment consists of tabulator stops; bell item counter; automatic paper feed stop and start feature, for wide sheet tabulation; single, double and non-line space; line finder; adjustable paper chutes; adjustable standards for roll paper 2 to 10 inches wide; variable line spacer.

Model 101 for 10-inch paper, same as Model 100 but without bell item counter, or automatic paper feed stop and start.

Model 102 for 10-inch paper, same as model 101 but without variable line spacer.

Model 6 for 6-inch paper, otherwise same as Model 102.

Model 130 for 13-inch paper, otherwise same as Model 100.

Model 131 for 13-inch paper, otherwise same as Model 101.

Model 180 for 18" paper, otherwise same as Model 100.

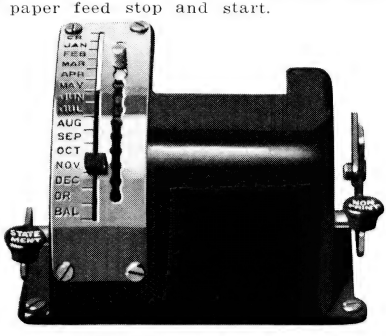
Model 181 for 18" paper, otherwise same as Model 101.

Model 240 for 24" paper, otherwise same as Model 100.

Model 241 for 24" paper, otherwise same as Model 101.

Model 300 for 30" paper, otherwise same as Model 100.

Model 301 for 30" paper, otherwise same as Model 101.




Single Word Printing Device

## DALTON—continued

### Word Printing Device

An attachment mounted at the printing point, to imprint designations for months, billing and bookkeeping terms, etc., opposite printed numerals. A lever and index affords selection (set-up) of character to be printed. The impression is made by a key mounted at the side of the device and is not automatic with the operation of the machine.

Single type Word Printing Device has one column containing fifteen characters; dual type has two columns containing thirty characters. A standard arrangement of characters is provided, but special characters may be supplied at extra charge.

### Models, Descriptions and Prices

### Super Series

**Super Series:** Made in 9, 11 and 13 column capacities. Equipped with two-color ribbon, split and normal device, total, sub-total, non-add, non-print, correction, repeat, subtraction and back spacer keys.

**Shuttle Carriage Series:** Made in 9 and 13 column capacities; the same as regular Super Models, except that they are equipped with an automatic shuttle carriage, convertible to normal by a control lever situated above the keyboard.

**Cross Tabulating Carriage Series:** Made in 9 and 13 column capacities; the same as regular Super Models except that they are equipped with a cross tabulating carriage, convertible to normal by a control lever situated above the keyboard.

**Statement Series:** Made in 9 column capacity; same as regular Super Models except that they are equipped with shuttle carriage and word printing device. Also made for special work requiring variations in shuttle movement or position.

**Sterling Series:** Add British currency; made in 9, 11 and 13 column capacities. They have three extra keys on keyboard, add pounds, shillings, pence, and may be equipped with a farthing key if desired, ($50.00 extra).

**Little Giant Series Super Models** and **9-10 Regular Models,** are described and priced in following pages.

### Prices—Super Models

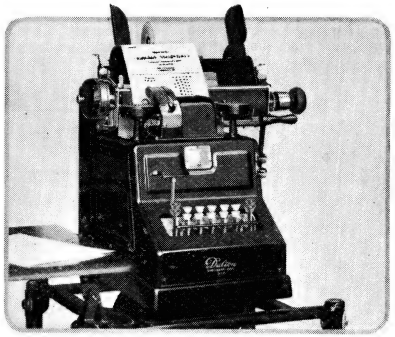
| | |
|---|---|
| Base price 9 column, 10-inch carriage, (Model 190-100) | $350.00 |
| Add for— | |
| 11 column model | 75.00 |
| 13 column model | 100.00 |
| Semi-automatic cross tabulating feature on 6" carriage | 50.00 |
| *Shuttle carriage: On statement models | 75.00 |
| On all other models | 100.00 |
| *Cross tabulating carriage: On bookkeeping models | 175.00 |
| On all other models | 150.00 |
| Split platen for tally-roll | 100.00 |
| Word printing device: Single column | 50.00 |
| Double column (dual type) | 75.00 |
| Electric Drive: For all standard AC or DC voltages | 100.00 |
| For non-standard voltages | 125.00 |
| Cyclometer item counter | 50.00 |
| British Currency Models, same as regular models, in 11 and 13 column capacities; extra for 9 column model | 50.00 |
| Fractions: eighths or twelfths, on 9 column models only | 50.00 |
| Features on 13 column models only: | |
| Standard multiplicand mechanism | 50.00 |
| Three factor multiplication mechanism | 50.00 |
| Duplex mechanism, converting machine into two sections, one with 6 and the other with 7 places, enabling the operator at will to introduce items into either section. | 100.00 |

## DALTON—continued

**Price Variations for carriages other than Model 100:**

| | —Deduct— | | | —Add— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Size .....( | 6″ | 10″ | 10″) | (13″ | 13″ | 18″ | 18″ | 24″ | 24″ | 30″ | 30″) |
| Model No....( | 6 | 101 | 102) | (130 | 131 | 180 | 181 | 240 | 241 | 300 | 301) |
| Regular .....$ | 75 | $25 | $50 | $25 | ... | $50 | .... | $150 | .... | $450 | .... |
| *Shuttle or Tabulating.. | 75 | 25 | 50 | 50 | $25 | 150 | $125 | 250 | $225 | 550 | $525 |

* The prices shown under "Carriages" represent the increase or decrease in price for substitution of wider or narrower carriages than the 10-inch carriage included in the base price for Model 190-100. An additional price for the shuttle or cross tabulating carriage feature must also be added to the base price before an addition or a decrease is made for a carriage other than the fully equipped 10-inch. Thus, the price of a machine equipped with a 13-inch shuttle carriage model No. 130, would be arrived at by taking the base price of $350.00, plus for shuttle carriage feature $100.00, plus for 13-inch Model 130 carriage $150.00, making a total of $600.00.



Statement Machine

### Little Giant Series

**Little Giant series** are of the same general construction as the regular super-series except that they do not have the split and normal device, are not equipped with word printing device; cross tabulating or shuttle carriages. The following features are optional equipment: two-color ribbon, non-print key, subtraction key and non-add feature.

### Prices

**Little Giant Models,** with Model 102 carriage, without two-color ribbon, non-print key, subtraction key or non-add feature .....

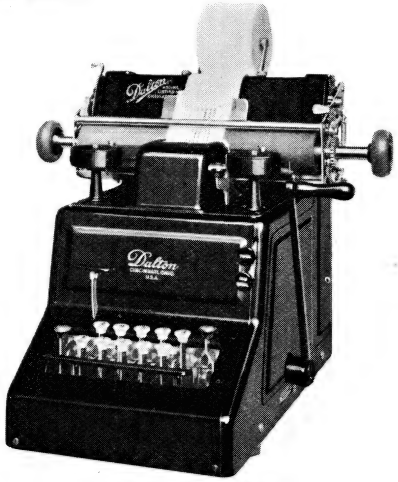
| 9-col. | 7-col. | 6-col. |
|---|---|---|
| ....$200.00 | $175.00 | $150.00 |

With Model 6 carriage....

| | | |
|---|---|---|
| ....$175.00 | $150.00 | $125.00 |

Add for—

Two-color ribbon and non-print key.....$25.00
Subtraction key..... 25.00
Non-add feature ..... 25.00
Electric drive.....100.00



Little Giant Model

## DALTON—continued

### Models, Descriptions and Prices—continued.

### 9-10 Regular Models

**These are not Super Models,** they are the old-style machine equipped with non-print lever, split and normal device, repeat key, designating key (printing the letter "E" before any item to distinguish it from all others and particularly used in connection with non-add items), non-add key (also known as the eliminating key), combined total and sub-total key (when held down during the operating stroke, a sub-total is taken; when released during the operating stroke, a total is taken). Equipped with 9-inch movable carriage, variable paper feed mechanism for one, two or three spaces; two color-ribbon, visible printing. Equipped with the same ten-key keyboard as is now embodied in the Super Models; the arrangement of the control keys is, however, slightly different.



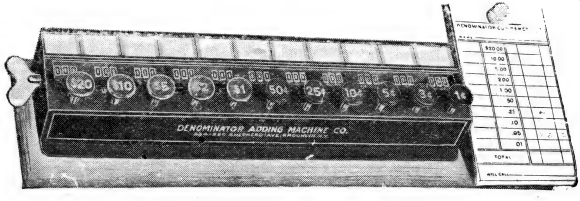

9-10 Regular Models

#### Prices

| | |
|---|---|
| 9 columns with 9-inch carriage | $250.00 |
| Add for: | |
| Shuttle carriage | 100.00 |
| Electric drive | 100.00 |

## DENOMINATOR

Made by the Denominator Adding Machine Company, 199 Cook Street, Brooklyn, New York. Distributed direct and by their own salesmen and agents.




The Denominator is, in a strict sense, a counting machine rather than an adding machine. It is designed for use in denominating payrolls, restaurant food control records, factory production records, etc., or for any work requiring the counting of items into groups or classes.

## DENOMINATOR—continued

It consists of a series of counters, each having a separate operating key, which when depressed registers one unit at a time. Each counter has a capacity of three places. A resetting device clears all counters. The machine is sold in units of eleven counters; as many additional units as may be required, can be grouped together. Special machines are provided for various lines of work, or the regular machine may be equipped with blank key tops and with an index holder to indicate the classification of the key and counter.

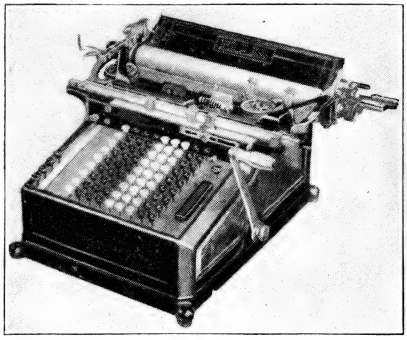
### Models and Prices

Regular model constructed of steel with celluloid key tops, 9½ inches long by 3 inches wide, eleven counters.....$45.00

## ELLIS

(See also Bookkeeping Machines)

Made by the Ellis Adding Machine Company. General offices and factory, Newark, New Jersey. Sold through their own representatives located in principal cities throughout the country.



A full key keyboard adding and listing machine equipped with a movable carriage and tabulator similar to that used on a typewriter. Made in single and two-counter models. The single counter model only is described in this section. Two-counter models and combination adding machine and typewriter models are described and catalogued under Bookkeeping Machines.

Single counter models may be equipped with a fully automatic carriage and a fully automatic control for non-add items. These models are designed for all general commercial use and for bank transit work. An item representing a bank ABA number, folio number, etc., may be printed in its proper column position and automatically non-added by the tabulation of the carriage. Single counter models are not equipped for direct subtraction as are the other models made by this company.

### Specifications

**Keyboard:** Standard, full button-key, flexible. **Control keys** (located in extreme left hand column) are: Non-add (printing such items in red); Sub-total (printing such items in black with the designation "C"); Full-total (printing such items in red with the designation "C"); general keyboard correction key; non-print slide (adjustable); left hand carriage return and line space lever.

**Carriage:** Takes paper 14 inches wide. Fully automatic cross tabulating carriage includes automatic return, and is equipped with stops for automatically non-adding in designated columns. Tabulator is controlled automatically by the printing operation or from a key on the keyboard, as desired. The tabulator stop bar is located on the front of the machine and stops are set from the front and are always visible.

# AMERICAN ADDING MACHINE




## FOREIGN— DEALERS —DOMESTIC

***WRITE FOR THE MOST SENSATIONAL ADDING MACHINE OFFER EVER MADE***

Our factory specializes in repairing and rebuilding all models of **AMERICAN** adding machines. Prompt, reasonable service. Ship your machines to us. *We guarantee satisfaction.*

Complete line of parts for **AMERICAN** adding machines. Tell us what you want, or send sample. We have it.

---

**AMERICAN ADDING MACHINE CO.**
**35 SOUTH DEARBORN ST. CHICAGO, ILLINOIS**

## ELLIS—continued

**Visibility:** The amount of set-up is visible on the keyboard and items and totals are visible as they are printed. There are no visible total wheels.

**Printer:** Two-color; items are printed in distinctive colors automatically or selectively; automatic ribbon reverse. The construction of the type section provides exceptional speed in printing, (150 strokes per minute can be maintained). The printing blow is made by the movement of the entire type sector in each column; the usual type hammers are not employed. A blank stroke is not necessary before printing a total.

### Models and Prices

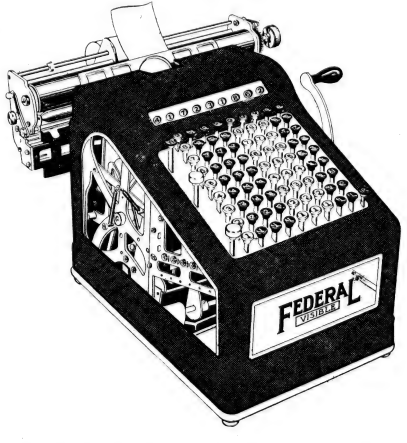
| | |
|---|---|
| 9 columns adding and totaling capacity; manually controlled carriage, electric drive | $450.00 |
| Fully automatic carriage, extra | 50.00 |
| Fully automatic control for non-add feature, extra | 25.00 |

## FEDERAL

## (Formerly known as The White Adding Machine)

Manufactured by the Colt's Patent Fire Arms Manufacturing Company, Hartford, Connecticut. Sold by Federal Adding Machines, Incorporated, 33 East Twenty-first Street, New York City, through their specially appointed dealers and agents.

A full button-key keyboard, visible, wide carriage, adding and listing machine, handle operated.




### Specifications

**Keyboard:** Standard, full button-key, flexible. **Control keys:** General correction key, total, sub-total (also operating as a general correction key), non-add, non-print and repeat. Blank stroke of operating handle is not necessary before taking a total. **Printing:** Two-color ribbon with automatic reverse. **Carriage:** Sliding type, moved by hand. Takes 13-inch paper; prints 12½-inch width; has single, double or non-line space adjustments. **Visibility:** Amount of set-up is visible on keyboard; accumulated amount is shown on dials, and items and totals are visible as they are printed. **Signals:** Non-add key prints symbol "E" (eliminate); sub-total is indicated by symbol "S"; total, by symbol "T"; non-print, by symbol "NP"; clear signal by symbol "T".

### Models and Prices

| Model | Description | Price |
|---|---|---|
| No. A | 9 item columns, 9 places in total, weight 65 pounds | $290.00 |
| No. A *7 | item columns, 7 places in total, weight 65 pounds | 190.00 |
| Electric drive, extra | | 100.00 |

## FEDERAL B

### (Formerly known as the Commercial)

Sold by Federal Adding Machines, Incorporated, 33 East Twenty-first Street, New York City, through their specially appointed dealers and agents.



A 9-key direct subtracting, adding and listing machine particularly adapted to the production of statements, being equipped to print months, dates and special transaction characters such as "Dr," "Cr," "Bal," etc., usual in billing. All operations are visible. All transactions are set from keyboard. A glass panel on front of machine encloses, visibly, transaction indicators, (showing kind of transaction and date as set-up from keyboard); number dials (in which total is accumulated), and keyboard register dials (in which number of columns set up on keyboard is indicated).

### Specifications

**Keyboard** is of the ten-key type. **Carriage:** 10-inch tabulating, shifted manually. **Control equipment:** Total key, total release lever, (total remains in machine to act as sub-total until released); subtraction, dating, repeat, eliminating and two regulating keys. **Printing:** 2-colors, visible. **Direct subtraction,** is controlled by a lever.

### Models and Prices

Model B, as above described.....$300.00
Electric drive, extra..... 100.00

## FIGURATOR

### (Also known as the Ray Adding Machine)

Sold by the Ray Adding Machine Company, 465 Washington Street, New York City, direct and through agency dealers.

This is a flat, gear type, stylus operated machine, similar to the Lightning, Pangborn, etc:

Made in 7 keyboard columns, 7 total columns.....$25.00

## GRAY VEST POCKET ARITHMOMETER

Made by the Morse Chain Company, Ithaca, New York. Sold direct by mail.

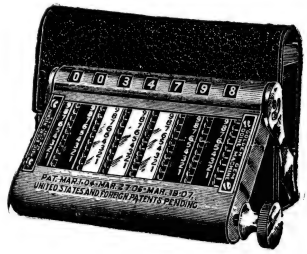
This is a compact stylus operated machine of all-steel construction, equipped with separate keyboards (made up of slides for each column) for addition and subtraction, and provided with visible dials in which the total or remainder is read. The carrying from one column to another is automatic.

Made in one model only, oxidized or nickel finish, 8 columns adding and totaling capacity .....$5.00

## GOLDEN GEM

Made by the Automatic Adding Machine Company, 148-152 Duane Street, New York City. Sold direct by mail and through dealers.

The Golden Gem (also known as the Gancher Adding Machine) is a pocket size, non-listing adding machine, operated by a stylus. It has been on the market since 1904. It will add, subtract and multiply.




### Specifications

**The keyboard** is arranged in columns marked with figures corresponding with the position of links in a continuous chain running in adjacent grooves.

To operate, the point of the stylus is inserted in the link opposite the number desired and the chain is moved down as far as it will go. The accumulator wheels in the top of the machine are actuated by the movement of each column chain, the carry from one column to another being automatic. The total shows in windows at the top. A turn of a knob resets all columns to zero. The construction is such that not more than one column can be operated at one time.

### Models and Prices

**(All Machines Are Fitted in Leather Cases)**

| | | |
|---|---|---|
| Original Model | 7 columns, size ⅝x3x4 inches | $15.00 |
| Fraction Model | 7 columns, (⅛ fractions and 6 unit columns) | 20.00 |
| Architects Model | 7 columns, (1/12 fractions and 6 unit columns) | 25.00 |
| Model 16 | 8 columns, size 1⅛x4¼x5 inches, with complementary figures for subtraction | 20.00 |
| Model 15 | 8 columns, same as above without complements | 20.00 |
| Original Model | 9 columns, size ⅝x3x4 inches | 20.00 |
| Fraction Model | 9 columns, (⅛ fractions and 8 unit columns) | 25.00 |
| English currency | Model, adds farthings, pence, shillings and pounds to £9999 | 30.00 |

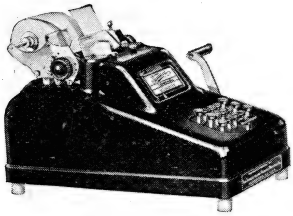
Fraction machines may be equipped to add half, quarter or eighth fractions, or feet, inches, hours, minutes, bushels, barrels, etc.

## HAYES

Being developed by the Hayes Adding Machine Company, 711 Seventeenth Street, Denver, Colorado. Not yet in production.

A full-flexible, button-key keyboard adding and listing machine, handle operated, 7 columns listing and totaling capacity, narrow carriage; all operations visible. Unit construction throughout. Equipment consists of total, sub-total, error and repeat keys; non-add and non-print keys optional; two-color printing, with totals and sub-totals in red; clear signal; automatic ribbon reverse. Weight, 19 pounds. Price, $75.00; with electric drive, $115.00.

# Sundstrand and Cash



## *The Adding Machine*

THE Sundstrand contains improvements and conveniences never before combined in an adding machine. Convenient size and light weight are Sundstrand ideas. You comfortably carry it to any desk or job. 10-key operation is a Sundstrand perfection. Gives speed with ease for beginner or expert. One-hand control is a Sundstrand creation. Left hand is free to follow column of figures or handle papers.

Automatic column selection is another Sundstrand feature. Units are automatically placed under units, tens under tens, etc., without the slightest waste of time. There are also advanced correction and protection features—a really practical and easy method of multiplying, with automatic shift —sturdy strength and reliability.

## *Direct Subtraction*

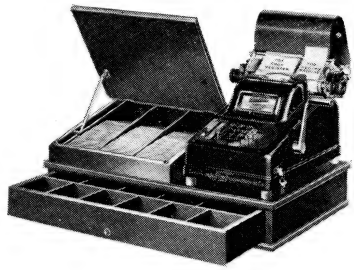
And now Sundstrand offers the added advantage of DIRECT SUBTRACTION. You just press the subtraction key, then with one operation, the amount "written" is subtracted and appears with printed proof like this, "42769-". Makes subtracting as simple and easy as adding. Several Sundstrand models; interchangeable carriages of standard widths; capacity up to 10 million; prices from $100.00 upward.

# Adding Machines Registers

## *The Combination Cash Register and Adding Machine*

THIS wonderful Sundstrand machine is both a cash register and an adding machine—offers *both* services in *one* machine at *one* low cost. It shows how many customers and classifies sales by departments and clerks. Makes an unerasable record at time of transaction. Indicates and records cash, credit, paid out, received on account. Automatically excludes from cash total—money paid out, charge items, etc. You can post direct from the printed tape and save bookkeeping. Cash total can be read at any time.

The machine records additions and multiplications on right-hand tape. Records cash register transactions on left-hand tape. Cash register tape rewinds in machine and is held under lock and key. Simple—speedy—records sales from 1c up—capacity $99,999.99. It gives positive protection to your cash. This register *can't* forget and *won't* let the clerk. Handy credit file in desk for handling credit accounts. Write direct to the factory at Rockford, Ill., for low price and full details.



## HARMON VEST POCKET CALCULATOR

Made by the Erie Calculator Company, Erie, Pennsylvania. Sold direct by mail.

The Harmon is, as its name implies, a calculator to be carried in the vest pocket. It is all steel, exceptionally simple in construction, weighs less than 4 ounces and measures 5 1/16 inches long by 3 3/16 inches wide and 5/16 inch thick. It is built with a keyboard made up of slides for each column on which items are set by a stylus; has automatic carry; resetting device; totals appear in dials directly below the keyboard.
Made in one model only, 7 item columns, 7 places in total.....$3.50

## HUMMEL

The Hummel Adding Machine Company, Michigan & Noble Streets, Indianapolis, Indiana, are experimenting and building models of a ledger posting machine, designed to automatically provide totals of balances, which they expect eventually to sell at a price of $350.00. They also propose to build a ten-key adding and listing machine to sell from $50.00 to $65.00.

## LIGHTNING CALCULATOR

Made by The Calculator Corporation, Grand Rapids, Michigan.
This is a flat, gear type of stylus operated machine, following the general design of such machines, representing the earliest type of adding machine construction. Each column consists of a flat disc having round perforations corresponding with number positions, which are stamped in circular formation on the case. Carrying is automatic. Totals are read from dials above the gear wheels. Clearing is accomplished by adding amounts to total to bring each dial to zero.
Made in 7 column adding and totalling capacity.....$15.00

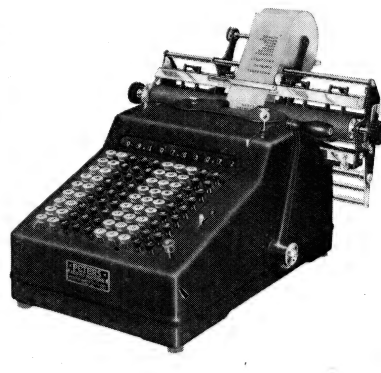
## PANGBORN CALCULATOR

A flat, gear type of stylus operated machine similar to the Lightning Calculator. Sold by the Calculator Corporation, Grand Rapids, Michigan. Totals are read through perforations in gear wheels; there are no total dials.
Made in 7 columns adding and totaling capacity.....$15.00

## PETERS

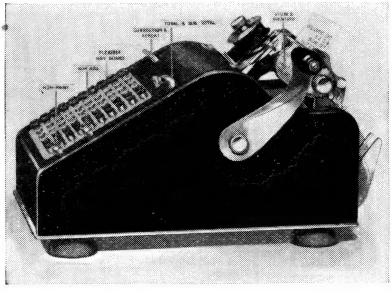
Made by the Peters-Morse Manufacturing Corporation. General sales offices and factory: Ithaca, New York. Sold by their own specially appointed salesmen and dealers.

A full button-key keyboard, visible, wide carriage, adding and listing machine, handle operated.



### Specifications

**Dimensions:** Base size 10 3/32 x 14 5/8 inches; weight 35 pounds. **Keyboard:** Standard full button-key, flexible. **Control equipment:** General keyboard correction key; repeat, non-add, non-print, total and sub-total levers. All control equipment



# $65

## *The* Portable ADDING MACHINE

***Nothing Cheap About It but the Price***

The Portable Adding Machine is

**The Desk Machine**

Strictly high grade, but proportioned on a smaller scale.

**50% Lighter**
**50% Smaller**
**50% Cheaper**

***Marketed Through Dealers.*** ***Are you in the Family?***

PORTABLE ADDING MACHINE CO.

208 So. La Salle Street
C H I C A G O

## PETERS—continued

except non-print lever, is operated by the right hand. **Printing:** One color only with automatic ribbon reverse. Signals designate clear, total, sub-total and non-add items. **Carriage:** Sliding type, moved by hand. Takes 12⅜ inch paper; printing width 12¼ inches; has single, double or non-line space adjustments. **Visibility:** Completely visible in all its operations.

### Models and Prices

Made in one model only, 10 item columns, 10 places in total.....$250.00

(An electrically operated model is in process of development.)

## POCKET ADDING MACHINE

Made by the Pocket Adding Machine Company, Jones Law Building, Pittsburgh, Pennsylvania. Sold through agents and dealers.

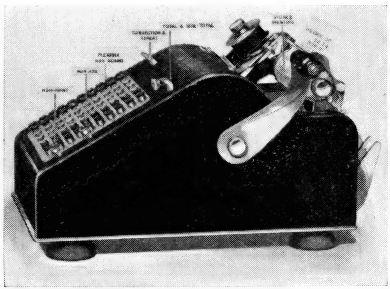
This is a simple non-listing stylus operated machine, having a keyboard arranged in slides. The operation of carrying must be done by the operator at the time an item is being set up on the keyboard. Totals appear in dials directly above keyboard. A clearing device is provided.

Made in one model only.....$3.00

## PORTABLE

Made by the Portable Adding Machine Company, 208 South LaSalle Street, Chicago, Illinois. Sold through specially appointed dealers and agents.

An adding and listing machine of simplified, compact design, having a full button-key, flexible keyboard, visible printing; handle operated. Stamped, all steel unit construction. The printing unit is designed and operates on the principle of a printing press, the carriage being brought forward to impress the paper against the type, which is engraved on the face of the accumulator wheels. There are no total dials.



### Specifications

**Size:** Base size 7 x 11 inches; weight 12 pounds. **Keyboard:** Compactly arranged, full button-key with cipher keys in each column; printing of ciphers is not automatic, thereby providing an automatic variable split. **Printing:** Visible (6 lines visible at printing point), one color using standard ½ inch ribbon; automatic ribbon reverse. **Carriage:** Narrow, fixed. **Equipment:** Combination total and sub-total, non-add and non-print keys, correction and repeat levers.

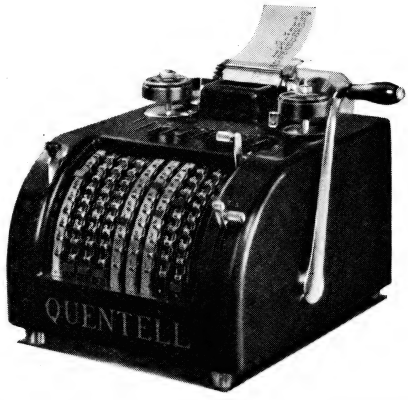
### Models and Prices

Made in one model only, 7 columns adding and totaling capacity....$65.00

## QUENTELL

Made by the Quentell Adding Machine Corporation, 342 Madison Avenue, New York City. Sold through specially appointed dealers and agents.

A portable adding and listing machine, distinctive particularly in the design and construction of its keyboard. The principle employed, while differing greatly from all preceding practice, is nevertheless, in general, conventional, having a separate setting position for each numeral in each column, without involving the use of separate keys. The design eliminates a considerable number of parts and provides a more compact keyboard.




The keyboard is in the form of a convex segment, but is in no way similar to that of other machines that have the convex or so-called radial keyboard. There are no levers to pull up or down and the operation is as rapid as on conventional full keyboard machines. The columns are vertical and divided from each other by slots into which are set universal bars, having projections at each number position, extending across the column at right angles to the bar. A definite setting position (called the setting point) is thereby provided for each number on the keyboard.

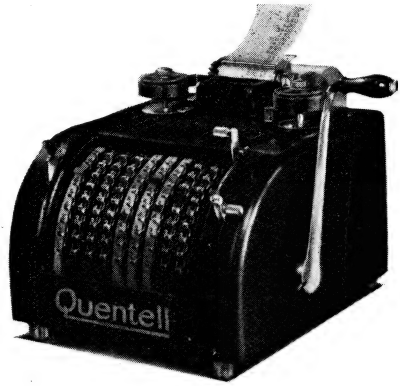
At the bottom of each column slot is a signal, which upon a very slight touch of the finger on any setting point in any column, immediately rises, automatically stops at and indicates the position selected. Any number of columns can be put into operation simultaneously. When the amount is set on the keyboard the operation of adding is the same as on conventional types of machines. As the item is added, the indicators are re-set for the next operation.

### Specifications

**Dimensions:** Base size 9⅝ x 10⅞ inches; weight 20 pounds. **Keyboard:** As above described. **Control equipment:** Total, sub-total and error levers, repeat key. **Printing:** Visible, one color ribbon; printing mechanism is of unit construction with single type bar for each column and single hammer controlling all columns. **Carriage:** Fixed, narrow size only, taking standard narrow width roll paper. **Visibility:** The amount of set-up is visible on the keyboard; accumulated amount is shown on total dials and items and totals are visible as they are printed.

### Models and Prices

Made in one model only, 9 keyboard columns, 9 places in total.....$89.00




A NEW PRINCIPLE KEYBOARD

*No keys to depress or punch.*

*No setting levers to pull up or down.*

*Speed quite as fast as any adding machine on the market.*

## PAR WITH ANY ADDING MACHINE SELLING UP TO $250




THE Quentell Adding and Listing Machine insures a service and dependability the equal of any adding machine in the market costing twice and three times its price. It is not a toy or a miniature or a compromise, but a full-sized man's machine, which goes on to the desk and to work.

CAPACITY: 9 banks—registering and printing total of 9.999.999.99.

WEIGHT: 19 lbs. or about 13 lbs., less than any other machine of similar capacity.

DESK SPACE: Occupies about the same desk space as a portable typewriter. Requires no stand.

CONSTRUCTION. Over 1000 parts eliminated. Printing mechanism contains 50% and the keyboard only 37% of the parts found in full keyboard machines of same capacity.

GUARANTEE: Same as the most expensive adding machine.

The most economical and serviceable adding and listing machine now on the market.

**QUENTELL SALES CORPORATION**

**342 Madison Avenue** New York

## ROBINSON

Made by the William A. Robinson Sales Company, 20 East Lake Street, Chicago, Illinois. Sold direct by mail.

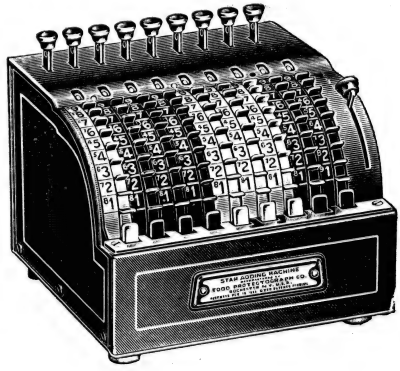
This is a flat, gear type, non-listing machine, but instead of employing a stylus as is customary in adding devices of this type, it has an operating key (consisting of a stylus fixed to a swiveled handle), positioned over each column gear. The keyboard is provided with complements for subtraction. Totals appear in dials over each column position.

Made in 7 column model only.....$50.00

## STAR

Made by the Todd Protectograph Company, Inc., Rochester, New York. Sold by their own salesmen.

The Star (formerly known as the "Amco"), is a key driven machine, having a pull-down lever keyboard, consisting of levers for each number position in each column, mounted on a segment shaped slide. Amounts are accumulated in dials directly above the keyboard.



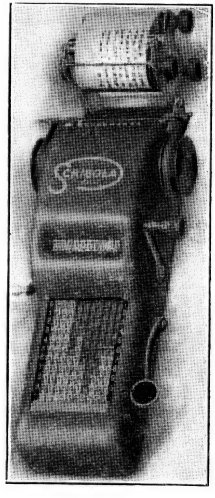
### Specifications

**Dimensions:** Base size is 5½ x 6¾ inches, height 6½ inches; weight 8 pounds. **Keyboard** is operated by placing the finger on the column slide just above the lever, opposite the designation of number to be added, and the entire column slide is pulled down to a "home" position at the bottom. Releasing the finger allows the segment to return to its normal position. Complements are provided on the keyboard for subtraction. **Control equipment** consists of a general clearing key; separate keys (at the top of the machine), one for each column, when depressed, eliminate the carry when subtraction is being performed. The lock-bar handle, when raised, provides a convenient handle for carrying; when lowered, it locks the keyboard and prevents the totals from being disturbed. The construction of the machine provides for its operation, one column at a time; the simultaneous operation of two columns when there is a carry involved, results in loss of the carry.

### Models and Prices

Made in one model only—9 item columns, 9 places in total. Price....$42.50

## SCRIBOLA



Made by Horras Rechenmaschinen Gesellschaft, 15 Alte Jacobstrasse, Berlin, Germany. No organized representation in the United States.

Although this machine is not of American manufacture, it is included because of the interest manifested in its recent advertising in American trade papers.

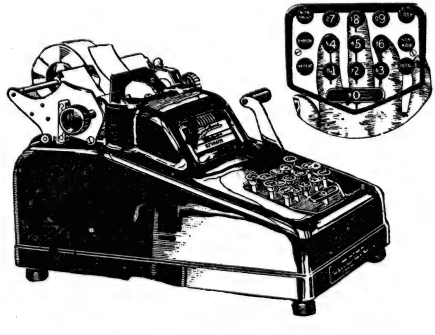
A stylus set, crank operated adding and listing machine, having visible total dials, narrow carriage, two color blind printing. The keyboard is of saw tooth slide construction, on which amounts are registered by a stylus, indicating and maintaining amount set up until added or corrected. Size 2¾x12¼ inches; weight approximately 6 pounds.

Price .....$100.00

## SUNDSTRAND

(See also Combination Registers)

Made by the Sundstrand Adding Machine Company, Rockford, Illinois. Sold by specially appointed dealers and their sales force throughout the country.



A ten-key portable machine. The first models were put on the market in 1914 and in September, 1923, the direct subtracting model was announced. All models have the keyboard arranged in three rows of three keys each, with a bar or cipher key below; control keys are arranged along either side of the amount keys.

A feature of the construction of these machines is that a correction may be made either before or after the handle is pulled forward. If it is desired to correct an item before the handle is pulled, a short pull of the handle eliminates the entire item. After the handle is pulled forward and before the return stroke begins, an item may be non-printed or non-added.

## SUNDSTRAND—continued

Sub-totals are automatically printed without the depression of a control key. When the last item added does not involve a carry, the next stroke of the operating handle will print a sub-total; where there is a carry involved, the sub-total will not print until a blank stroke has been taken.

**Direct subtraction** (on Direct Subtractor Models), is accomplished with the same speed and by the same method of operation as addition. Complementary numbers are not used on the keyboard or in any part of a subtracting operation. The mechanism functions to perform the entire subtracting operation by the depression of the subtraction key. A complete printed proof is furnished: The subtracted amount is printed on the tape and designated by a minus sign following it. When a total is taken, the balance, (the difference between added and subtracted items), is printed.

48
24—

24

When the final result after a subtraction, or series of subtractions, represents a credit balance (when the amount of the subtrahend exceeds the minuend), the difference when printed appears as a complement. Thus, 48 subtracted when there is a total of but 24 in the machine would appear on the tape—

24
48—

999976

This would show only when a total is taken. If before the end of the operation, other debit items are added, the machine will automatically convert the complement into a true amount and show it as such when the balance is printed.

**Note:** Regular models (those not designated as Subtractor Models), subtract in the usual way, by means of complementary numbers.

## Specifications

**Dimensions:** All models have the same size base, measuring 8 inches wide by 15 inches long and with a 5" carriage, weigh approximately 30 pounds. **Keyboard:** Ten-keys, with numeral keys arranged for touch operation in three rows of three keys each, with control keys in vertical rows on each side of the number keys. The cipher and spacing key is a bar located at the front of the keyboard. Models other than the Direct Subtractor models have key tops with co-digits (complementary numbers).

**Control Keys:** Stripped keyboard models have repeat, non-add and total keys. Full keyboard models have non-print, error, repeat, total, non-add and lock keys. On the Subtractor Model, the subtraction key takes the place of the lock key. The operating handle when given a short pull, acts as a general correction key. All control keys may be made to function at any time during the operation of the machine until the return stroke of the operating handle has been started.

The error key removes an item set up, one figure at a time, beginning with the last figure entered. It is a convenience when multiplying large decimals from left to right, automatically eliminating unnecessary extended decimal fraction equivalents.

# SUNDSTRAND

## Specifications—continued

**Carriage:** Mounted on roller bearings. All carriages are movable and interchangeable and are made in various sizes to take paper from 5 inches to 18 inches wide. The 5 and 7-inch carriages are standard equipment. Any carriage can be detached instantly and a larger or smaller carriage substituted. All have platen or paper release, equipped for single or double spacing, ratchet release and with slot bars for column tabulation. Paper roll guides are adjustable to any width roll up to the capacity of the carriage.

**Visibility:** The amount of each item is visible as printed. There are no visible total wheels and the keyboard keys restore after the depression for each numeral. The digit indicator, located just above the keyboard, is an arrow moving along a scale showing as each item is set up on the keyboard, the number of columns occupied in the machine. The arrow moves forward one place with each figure placed in the machine and returns to zero after each handle pull.

**Printer:** Two-color with automatic ribbon reverse; totals and sub-totals printed in red; non-add and subtracted items designated by distinctive signals.

## Models and Prices

**Stripped Keyboards** have non-add, total and repeat keys.

**Full Keyboards** have non-add, total, repeat, non-print and lock keys, and error or back spacer key.

**Subtraction Models** have subtraction key in place of the lock key.

The first figure of capacity denotes the listing capacity in columns; the second figure denotes the number of places in total.

| Model Number New | Model Number Old | Capacity | Carriage Size | Keyboard | | Price |
|---|---|---|---|---|---|---|
| 600-22-5 | (A) | 6-6 | 5″ | Stripped | | $100.00 |
| 700-22-5 | (BS) | 7-7 | 5″ | Stripped | | 125.00 |
| 900-22-5 | (CS) | 9-9 | 5″ | Stripped | | 175.00 |
| 902-22-7 | | 9-9 | 7″ | Stripped | Statement Model | 290.00 |
| 1100-22-5 | | 9-11 | 5″ | Stripped | | 225.00 |
| 700-21-5 | (B) | 9-9 | 5″ | Full | | 150.00 |
| 720-51-7 | | 7-7 | 7″ | Full | Direct Subtractor | 225.00 |
| 820-51-7 | | 8-8 | 7″ | Full | Direct Subtractor | 250.00 |
| 900-21-5 | (C) | 9-9 | 5″ | Full | | 200.00 |
| 902-21-7 | | 9-9 | 7″ | Full | Statement Model | 315.00 |
| 912-21-5 | | 9-8 11/12 | 5″ | Full | 1-12 Fractions | 225.00 |
| 920-51-7 | | 9-9 | 7″ | Full | Direct Subtractor | 275.00 |
| 1000-21-5 | (J) | 9-10 | 5″ | Full | | 225.00 |
| 1012-21-5 | | 9-9 11/12 | 5″ | Full | 1-12 Fractions | 250.00 |
| 1100-21-5 | | 9-11 | 5″ | Full | | 250.00 |

| Extra Features | Price With Machine | Price Separate |
|---|---|---|
| Carriages, 10 inch, extra | $10.00 | $20.00 |
| 13 inch, extra | 20.00 | 30.00 |
| 18 inch, extra | 30.00 | 40.00 |
| Motor Drive, and stand | 100.00 | 100.00 |
| Fractions: Quarters or eighths, extra | 25.00 | |

Twelfths, (Furnished only as standard equipment on models 912-21-5 and 1012-21-5)

# VICTOR

Made by the Victor Adding Machine Company, Chicago, Ill. Sold through their own salesmen and specially appointed dealers.

The Victor is a portable machine with full, flexible keyboard, key set, crank operated, completely visible.

## Specifications

**Portability:** Weight 27 pounds, base size 9x17 inches, height 10 inches to top of paper roll. **Keyboard:** Full button key, flexible, equipped with complements for subtraction. **Control Keys:** Combination Total and sub-total, Repeat and Non-add. **Carriage:** Fixed, narrow; also wide (providing a writing space of 13 inches), non-automatic, tabulating with adjustable stops, single, double and non-line space adjustments, and compression release. **Printing:** Two colors; automatic ribbon reverse. **Signals:** Total, sub-total and clear signals printed in red with distinctive designations for total and sub-total. Totals may be taken without a blank stroke. The taking of the total clears the machine.







## Models and Prices

Regular model, 8 item columns, 8 places in total, typewriter style key tops.$100.00

Wide carriage model, same as regular model, but with 13-inch carriage and regular composition adding machine style key tops.$125.00

(See page 64 for description of improved model.)

# WALES

**(See also Bookkeeping Machines and Combination Registers)**

Made by the Wales Adding Machine Company, Wilkesbarre, Pennsylvania. Sold by specially appointed dealers and their own sales force throughout the country.

A wide variety of models differing in capacities, carriage lengths and control equipment, comprised the line until late in 1923 when it was reduced by several numbers to the present line. All models are completely visible in their operation. They are divided into two general classes: (1) regular models, (2) portable models. Both classes are made in models with one and two counters. Two counter models of the larger size machines are described under Bookkeeping machines.




## Specifications of Regular Models

**Keyboard:** Standard, full button key, flexible, without complements for subtraction. **Control Keys:** Total, sub-total, repeat, non-add, non-print and general correction key. Machine is cleared when total is taken. Total and sub-total keys lock down when depressed.

**Carriage:** Narrow, fixed, 5 inches wide for handling tape and small statement sheets; wide carriages, in two sizes to take 13 or 18-inch paper, are movable, mounted on roller bearings, and equipped with adjustable stops for cross tabulation to column positions on wide sheets. The lateral movement is manually controlled by a lever located at the front of the right hand side of the carriage. A semi-automatic cross tabulating carriage is optional equipment. The holder for rolled paper is a frame which swings back out of the way when wide sheets are being used. Vertical feed spacing lever has controls for one or two line spacing. A forward reading bell item counter is optional equipment. It has a return lock for locking top of columns, and is equipped with a scale.

**Printing:** Two-color, with automatic ribbon reverse. Ribbon holder with self-contained mechanism is located entirely outside the case of the machine and is instantly removable to allow for quick changing of ribbon.

**The double automatic clear signal** is a feature. Indication that the machine is clear is shown by the signal T printed when the total key is depressed, or by a distinctive signal, (a period inside of a circle), printed automatically with the first item following a printed total.

## WALES—continued

### Specifications—continued

**Visibility:** The amount of set up is visible on keyboard; the accumulated amount is shown in the dials located directly above the keyboard and items and totals are visible as they are printed.

### Models and Prices

| Standard Models | Capacity | Carriage | Price |
|---|---|---|---|
| No. 20 | 9 Cols. | 13-inch movable | $300.00 |
| No. 20-B | 9 Cols. | 5-inch fixed | 250.00 |
| No. 25 | 7 Cols. | 13-inch movable | 225.00 |
| No. 25-B | 7 Cols. | 5-inch fixed | 175.00 |
| No. 401 | 11 Cols. | 13-inch movable, with variable split device | 360.00 |

Extra Features:

**Split and normal device** for splitting the machine to permit of adding two sets of lists and totaling on one or both sets as may be desired; controlled by a key above the keyboard,extra..... 25.00

**Date, count and normal,** is the same as split and normal, except that it is also equipped to count the number of items listed, extra ..... 30.00

**Count and normal,** is the same as split and normal, except that listing is possible in one column only and items are counted on the other side as they are listed, extra..... 15.00

**Semi-automatic cross tabulating carriage,** extra..... 25.00

**18-inch carriage,** extra ..... 25.00

**Fractions:** Fourths, eighths, twelfths, hours and minutes, or tons and cwt., extra..... 15.00

**Bell item counter,** described under "Carriages"..... 12.50

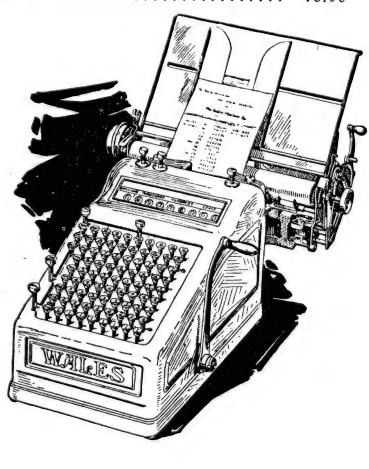
**Electric drive** ..... 100.00

**Shuttle Carriage,** for listing, alternately, in two adjoining columns, extra ..... 75.00

### Specifications of Statement Models

Statement Models are equipped with keys in the extreme left hand columns for printing abbreviations for months and date numerals. Some models are also equipped with a device called a "character bar," providing for imprinting as many as twelve 3-letter abbreviations of any characters desired. This device is set by a lever and scale, located either to the left or right of the total dials. It does not affect the adding or listing capacity of the machine.

**Carriage:** Accommodates paper 13 inches wide; equipped with a high back (paper table), injector and ejector and bell item counter. Models as noted have an automatic cross tabulating carriage and a ribbon control key, enabling the operator to show credits in red and charges in black.



## WALES—continued

### Models and Prices

Model No. 20-C, capacity with dates, 6 columns; without dates, 8 columns; 13-inch A. C. T. carriage, high back, injector and ejector, ribbon control key and cross bar.....$375.00

Model No. 20-SKS, capacity, with dates, 8 columns; without dates, 7.6 columns; 13-inch manually tabulated carriage, high back, injector and ejector..... 310.00

Model No. 411, capacity, with dates, 8 columns; without dates, 9.6 columns; 13-inch high back, manually tabulated carriage, variable split device, date repeat key, injector and ejector..... 410.00

Model No. 412, same as Model No. 411, except that equipment includes character bar, semi-automatic cross tabulating carriage and date block-out device .....$510.00

All prices shown are for hand operated machines. Extra features are the same as for regular models.

### Specifications of Portable Models

Portable Models were placed on the market in 1921. They combine many of the features found in the regular models. They are compact; the average weight is about 30 pounds; are 9 inches wide by 14½ inches long. Made both in single counter and duplex models.




**Duplex Models** (equipped with two counters), are especially adapted for cross footing and all work requiring totals of individual groups, and at the same time accumulating a grand total.

They differ from the usual design of duplex machines in that the second counter is used only for accumulating grand totals. It cannot be thrown in to accumulate an individual total. Items as they are introduced into the first counter are at the same time, introduced into the second, both counters being in adding position at the one time. When a total of the first counter is taken, the second counter moves out of position leaving its accumulated total undisturbed until a second totaling and clearing operation is made, whereupon it will print the accumulated total and clear.

The standard arrangement of Duplex models provides for a listing capacity of one column more than the totaling capacity, the extreme left-

## WALES—continued

hand column of the keyboard being split off from the accumulating mechanism of the machine so as to print numerals, representing clerk or department designations, etc. If desired, however, the machine may be supplied with the full capacity available.

**Carriages:** All Portable models are equipped with narrow, fixed carriages to accommodate paper up to 5½ inches wide. The design of the paper holder is such that it may be swung out of the way when paper in sheets is to be fed.

**Control equipment** consists of total key, combination sub-total and non-add key, repeat lever and correction lever. Designed for one hand operation.

**Visibility:** All items are visible as they are set up on the keyboard, and as printed; the accumulated total is visible in the total dials directly above the keyboard. On duplex models the grand total is not visible.

**Printing:** One color only with automatic reverse; a positive clear signal prints automatically with the first figure printed after a total has been taken.

### Models and Prices

| Model | Capacity | | Description | Price |
|---|---|---|---|---|
| | Listing | Totaling | | |
| 103 | 7 Cols. | 6 Cols. | Single counter ..... | $185.00 |
| 105 | 7 Cols. | 6 Cols. | Duplex counter ..... | 235.00 |
| 106 | 6 Cols. | 6 Cols. | Single counter ..... | 135.00 |
| 107 | 7 Cols. | 7 Cols. | Single counter ..... | 160.00 |
| 109 | 7 Cols. | 7 Cols. | Duplex counter ..... | 210.00 |

Not furnished with electric drive. All features are standard.

## WRENN

Made by The Wrenn Adding Machine Company, 4th and Channing Streets. N. E., Washington, D. C. Sold direct and through specially appointed salesmen and dealers.

A machine of the direct operating type, having a pull-down chain keyboard operated by the finger. Amounts are accumulated in dials directly above the keyboard.




### Specifications

**Dimensions:** Base size, 8 x 10 inches, weight 12 pounds. **Keyboard:** Consists of an endless chain with links ½ inch high, ⅝ inch wide operating over a keyboard scale marked with numerals for addition and complements for subtraction. To operate, the finger is placed in the link on the number desired and the chain is pulled down to a "home" position provided with a lock operated by the engagement of the finger at the conclusion of each stroke, obviating the possibility of overthrow on speedy operation.

## WRENN—continued

The construction provides for operation of one column at a time; simultaneous operation of two columns when there is a carry involved, results in the loss of the carry. A distinctive feature is that the total wheels also carry complements for subtraction, affording unique possibilities in the operation of the machine, in problems of subtraction. A general clearing handle, equipped with a releasing latch, resets all total dials.

### Models and Prices

Standard model, 8 columns adding and totalling capacity.....$47.50
Special model, 5 columns adding and totalling capacity..... 30.00

## VICTOR

### (Improved Model)

On February 1st, 1924, the Victor Adding Machine Company placed on the market an improved model adding machine to supersede their previous narrow carriage model. The main improvements consist of individual sub-total key (previous model had a combination total and sub-total key); composition key tops (previous model had typewriter style key tops); improved handle action and more quiet operation; improved finish of the case. There has been no change in the price of $100.00.

Wide carriage models will be similarly equipped.

(See Page 59 for complete descriptions.)

Carbonized Roll Paper

*In Large or Small Quantities to Manufacturers, Dealers or Users*

For

**Adding Machines and Combination Registers**

Uniform Quality and Substantial Savings are Assured by buying direct from the manufacturer.

**All Widths:**
**One to Ten Inches.**

**All Quantities:**
**One, Three or Six Dozen Cartons. Boxes of One Hundred.**

IRON CLAD RIBBON and CARBON CO.
100 Grand Street, New York City

**Also Manufacturers of a**
**Superb Line of Typewriter Ribbons and Carbon Paper**

# Calculating Machines

## PRINCIPLES OF OPERATION

Present day calculating machines are not difficult to understand or operate. They are but vehicles for the mechanical calculation of problems by any of the four branches of arithmetic. They do not change the formulas or methods used in arithmetic, except insofar as they often provide short cuts and duplex results impossible by mental figuring. Their operation follows the principles of mathematics, eliminating the mental effort and reducing to a minimum the time required in securing results. Any person knowing how to add, subtract, multiply and divide mentally, has no difficulty in becoming familiar with, and acquiring speed in their operation.

Although all calculating machines will add, the term is generally applied to such machines as are specially equipped for speed in multiplication, subtraction and division (multiple subtraction). Modern calculating machines are equipped with safeguards to prevent damage to the machine through misoperation and to appraise the operator when errors have been made.

Most makes provide a bell warning signal when an error has been made in division (when the divisor has been subtracted once too often). Such an error is corrected readily by reversing the mechanism of the machine and adding the error (the divisor, which is still set up on the keyboard) back into the dividend dials, allowing the calculation to proceed.

**Carriage equipped computing machines** are button-key or lever-set and crank operated (hand or electric). The modern tendency is toward button-key keyboards. The carriage is mounted above or below the keyboard and contains, usually, two sets of accumulator wheels or dials, one of smaller capacity (or number of places) than the other.

### Dials

**The larger set of carriage dials** is usually known as the Total or Product dials. They show the total in addition, the product in multiplication, the minuend or remainder in subtraction and the dividend or remainder in division. **The smaller set** is usually known as the Proof or Multiplier dials. They show the multiplier in multiplication and the quotient in division. **Check or register dials** are also provided on some machines, either in or close to the carriage. They show and afford a check of the amount as set up on the keyboard. Clearing of dials is provided for by devices distinctive with each make of machine.

### Carriage

The carriage is designed for lateral movement (right or left) so as to accumulate on any combination of columns in the carriage dials, the amount set up on the keyboard. Shifting is necessary in multiplication and division, but it is also a convenience in addition, such as to allow the simultaneous accumulation of separate totals of debits and credits, etc. While all makes provide for the movement of the carriage from end to end of the machine, some limit the movement to one column at a time while the carriage is in an operating position, and require disengagement (by lifting it out of the operating position, etc.) when the shift is to extend several columns continuously and uninterruptedly.

Automatic shifting of the carriage as the calculation of a problem progresses, is accomplished in some machines.

### Keyboard

Keyboards on some lever-set machines are in the form of a convex segment, formed by the contour of the case. The levers arranged in

## PRINCIPLES OF OPERATION—continued

columns, protrude from slots. On some machines of this design, the levers are carried by rotation into the mechanism of the machine as it is operated; on others the levers remain stationary after being set in position. Machines of this design are usually referred to as being of the Odhner type, the name being that of a European designer of an early model. Other types have a flat-bed keyboard, with set-up levers operating in slides, the combination sometimes being referred to as a slideboard. Full button-key boards, follow the flat-bed design similar to standard listing adding machines.

### Addition

Addition is accomplished by setting an item on the keyboard and by operation of the crank (or motor) transferring it to the total dials in the carriage. Subsequent items are added in the same way.

### Multiplication

Multiplication is performed by repeated addition. Provision is made so that the set-up of items on the keyboard can be retained and repeated. Some makes have a secondary keyboard functioning to control, in accordance with its set-up, the number of repetitions desired. The carriage is moved manually or automatically to right or left to build up figures in the carriage dials in their proper columnar relations. The multiplier is indicated in the small carriage dials; the product appears in the large carriage dials, and the item multiplied (multiplicand) appears as the amount set up on the keyboard, or in the Register dials. A visible check of accuracy is afforded at all stages of the calculation. In some machines a high degree of automatic operation makes possible the setting-up of both factors of a problem in multiplication (or division), the machine automatically accomplishing every other operation of computing the answer.

### Subtraction

**Subtraction is direct:** the use of complementary numbers is not required. The amount from which the deduction is to be made is first placed in the total dials (on some machines by transferring from the keyboard set-up, as in addition; on others, direct by knobs at each dial). The amount to be subtracted is then set up on the keyboard. The machine is operated once for each time it is desired to subtract the item, (or from a secondary keyboard as described for multiplication). The remainder, or balance, appears in the total dials.

### Crank Movement

Some machines are designed to add or subtract according to the direction in which the operating handle is rotated; a forward turn causes such machines to add or multiply, a backward turn causes them to subtract or divide. In the design of some machines two stopping places of the crank are provided usually at the extreme high point of revolution or the extreme low point of revolution, according to whether the machine is adding or subtracting. The later tendency, however, is to provide a common stopping position for the crank regardless of the nature of the calculation.

Differently constructed machines provide for the crank to be operated in one direction only; the reversing of the mechanism (for subtraction or division) being accomplished by a shift lever and indicator similar in operation to the gear shift on an automobile. One position causes the mechanism to be driven forward to add or multiply and the second position reverses the mechanism to subtract or divide. (Some makes provide separate positions for addition, subtraction, multiplication and division). On such machines, the operating crank is made to stop always at the same point.

## Division

Division is accomplished on most machines by repeated subtraction. The number of times each item is subtracted is automatically counted in the small set of dials in the carriage, thereby providing in these dials, the quotient in problems of division. The divisor is the amount set up on the keyboard, the same as the minuend in subtraction. By moving the carriage to the right or left as the problem progresses, the quotient is built up in its proper columnar relation.

Some makes also accomplish division by the "building up" or multiplication process. For example, the answer to 13 divided by 3, would be solved by multiplying 3 by itself until it is built up (but does not exceed) 13. The second set of dials records the number of multiplications, providing the answer: in this case 4 and 1 remainder.

Triplex machines (those with three sets of dials in the carriage) make it possible to extend invoices, secure individual products and accumulate a grand product in the third set of dials so that when the last item has been extended it is unnecessary to add together the individual products to secure the total. In problems of pro-rating, shares can be figured individually and at the same time accumulate the total. In any problem of division, as the dividend is reduced (in one set of dials), the third set of dials accumulate (multiply); when the problem is finished, the dividend appears as a proof in the third set of dials.

## Multiplex Operations

The construction of machines operating on these principles, lend themselves, if desired, after the operator is familiar with the machine, to short and unusual methods of accomplishing calculations, and are possible of performing two different calculations at the one time, such as simultaneous division and multiplication.

## Capacities

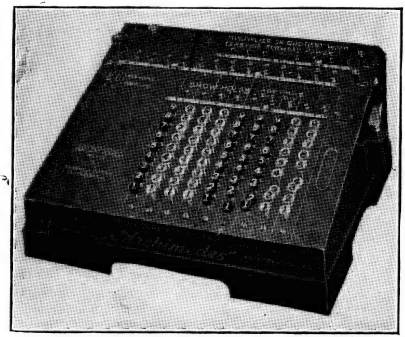
**Note: Wherever capacities of the various makes of calculating machines are shown herein, the first figure of capacity should be understood to mean the number of item columns on the keyboard; the second figure, the number of places in the smaller (quotient, multiplier or proof) dials; the third, the number of places in the total (product or dividend) dials.**

*The publishers of the DIGEST are not connected with, or subsidized by any manufacturer of the products it describes.*

## ARCHIMEDES

Made in Europe. Sold in the United States by Carl H. Reuter, Incorporated, Land Title Building, Philadelphia, Pennsylvania. Branches in all principal cities.

A portable, **high speed** computing machine, designed to handle all four divisions of figuring. **Made** in full button-key keyboard, and lever-set slideboard models, hand (crank) operated; equipped with movable carriage containing two sets of dials.



### Specifications

**Dimensions:** Approximately 8x15 inches, portable, for desk use. **Keyboard:** Full button-key, with separate column release keys; also slide-board type with levers set in slides. **Dials:** Two accumulator sets, in carriage. The larger, (bottom) set for Total, Product or Dividend; the smaller (upper) set for Multiplier or Quotient. An extra set of register dials above the keyboard shows amount of set-up. All dials are arranged in straight rows, one above the other, providing ease of checking. Product dials are provided with setting knobs to allow the introduction of items direct (without transferring from keyboard).

A feature of this machine is the transfer (carrying) mechanism in both accumulator dials, transferring to the full capacity of the machine, allowing short cuts in operation otherwise impossible.

**Operation:** Hand only. Crank turns in one direction; operating levers control mechanism to add or subtract. **Auxiliary equipment** consists of carriage shifting knob, to raise and shift carriage one or more places at a time, individual dial clearing levers, keyboard clearing lever, decimal pointers on all dials.

### Models and Prices

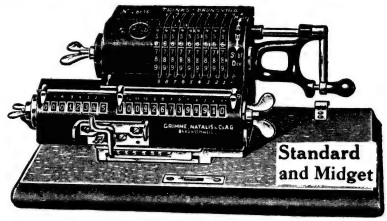
| Capacity | Model C (Lever) Slideboard | Model D Button Keyboard |
|---|---|---|
| 13 places, | C-13.....$340.00 | D-13.....$375.00 |
| 16 places, | C-16..... 375.00 | D-16..... 425.00 |
| 20 places, | C-20..... 425.00 | D-20..... 475.00 |

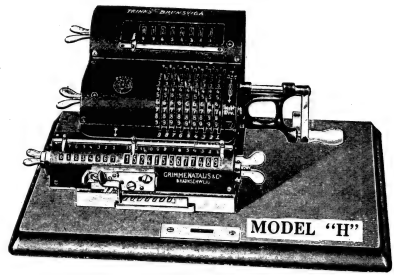
## BRUNSVIGA
### (System Trinks)

Made in Germany. Sold in the United States by Carl H. Reuter, Incorporated, Land Title Building, Philadelphia, Pennsylvania. Branches in all principal cities.

Comprising a line of light weight, rotary type, calculating machines for high speed handling of all branches of figuring. Made in Standard (heavy construction), Midget (light construction) and Triplex models.

All models are lever set, two-way crank operated, having a manually operated carriage, with shifting device; resetting devices on all dials. Automatic locking devices prevent damage through misoperation. Carry over device in dials allows short cuts in figuring involved problems.




### Models, Specifications and Prices

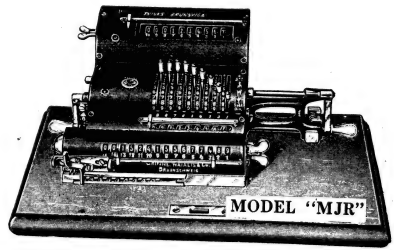
Model B—Standard (heavy construction) is the original type of machine. Multiplying counter shows white figures for positive calculations, and red figures for negative calculations of quotient. Capacity 9x8x13, weight 23 lbs., price .....$275.00

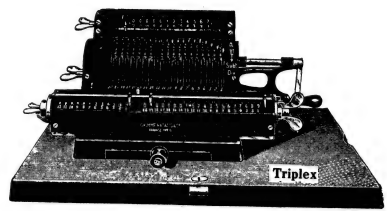
Model B — Midget (light construction), quiet in operation, same in design, operation and capacity as Model B—Standard, but weighs 7½ pounds, price .....$300.00

Model A—Midget, same as Model B—Midget, except capacity is 9x10x18; weight 8½ pounds, price.....$350.00

Model D—Midget, same as Model A—Midget, except capacity is 12x12x20; weight 17 pounds, price.....$385.00

Model H — Midget, has above the setting levers, a special automatic counter transfer mechanism from



## BRUNSVIGA—continued
### (System Trinks)

units to billions, used in pro-rating, to total percentages multiplied in the left hand carriage multiplier or quotient dials, avoiding the necessity of separate adding percentages. Shows three factors of division. Capacity 9x8x13, weight 11 pounds, price.....$325.00

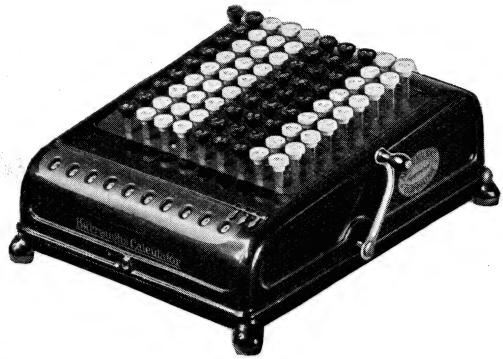
Model MJR—Midget, has proof dials to show amount set up on keyboard; set up levers have handles and do not revolve into machine; carry over device to full capacity of every counter; a practical model for the non-skilled operator; capacity 9x10x15, weight 17 pounds, price.....$375.00

Triplex—Designed for extended problems. Split device allows dividing the result register into two parts, allowing two problems to be solved simultaneously, or figuring the sub-result of a problem in one section, and accumulating the total result in the second section, showing all factors on the machine at conclusion. It is also fitted with two multiplier or two quotient counters, similar to Model H—Midget. Capacity 20x10x20; weight 25 lbs., price .....$425.00

## BURROUGHS CALCULATOR

Made by Burroughs Adding Machine Company, Detroit, Michigan. Sold by their own sales force through branch offices throughout the country.

A portable, full keyboard, direct key-driven machine, designed for high speed calculations involving all branches of mathematics. It is duplex in operation, in that it will add in more than one column at a time, each column having the capacity to add, receive and carry simultaneously.



Totals are shown in dials below keyboard; there is no printing mechanism. Dials are reset by a clearing lever at the side of the machine. The operation is quiet.

The operation involves only a depression of the numeral keys; there are no auxiliary keys except an extra key in the 9 position to the left of the last column, for use in subtracting.

The construction allows the depression of but a single key in each column at one time. When one key is started all other keys in that column are automatically locked against depression until the depressed key has returned to normal in-operative position. Weight, 11 pounds.

## BURROUGHS—continued

### Models and Prices

| Model | Keyboard | Total | Price |
|---|---|---|---|
| 5205 | 9 columns | 10 places | $200.00 |
| 5505 | 13 columns | 13 places | 300.00 |

Fraction models are also supplied for handling ⅛ fractions or 1/12 fractions, or a combination of both ⅛ and 1/12 fractions. Another model is equipped with keys in the first two columns to add hours and minutes (1-59).

No extra charge is made for fraction arrangement.

## COMPTOMETER

Made by Felt and Tarrant Manufacturing Company, 1713 North Paulina Street, Chicago, Illinois. Sold through their own sales force.




The Comptometer is claimed to be the first successful keyboard adding machine on the market. It has been manufactured continuously since 1887.

It is a portable, full keyboard, direct key driven machine designed for high speed calculations involving all branches of mathematics. It is duplex in operation, in that it will add in more than one column at a time, each column having the capacity to add, receive and carry simultaneously.

Totals are shown in dials below keyboard; denominational readings are facilitated by dial wheels of two colors, and by decimal markers; there is no printing mechanism. Dials are reset by a clearing lever at side of machine. Operation is quiet.

The operation involves only the depression of the numeral keys; there are no auxiliary keys except the release key (described below).

### Controlled Key Feature

Present models are protected against the possibility of error on the part of the operator, by compelling full key depression and up stroke.

**If a key is but partly depressed,** or if a key adjacent to the one being operated is accidently touched sufficiently to register, every other column but the one in which the fault has occurred, is automatically locked until the error is corrected.

**If the up-stroke of a key is not completed,** the keyboard automatically locks against further operation.

**The release key** situated at the upper right corner of the keyboard, serves to release the automatic locking of the keyboard when an incomplete keystroke has been made and corrected, and permit the operation to be resumed.

## COMPTOMETER—continued

### Clear Register Signal

Although the reading on total dials is always visible, three distinct signals are transmitted to the operator to indicate that the machine is clear before beginning a calculation.

1. On depression of the first key in a new calculation, a bell rings to denote that the dials are clear.

2. When the machine has been cleared, ciphers show, incompletely in all dials (only the tops of ciphers show). A full view of a cipher or figure in any dial indicates that the machine is not clear.

3. On striking the first key of a new calculation, when the machine is clear, there is a slight added resistance in the touch.

### Models and Prices

All models are equipped with co-digits (complementary numerals) for subtraction, and with individual column carry cut-out for subtraction.

| Model | Total Capacity | Weight | Dimensions | Price |
|---|---|---|---|---|
| T- 8 column | 9 columns | 17¼ lbs. | 14⅞x 8 x5¾ | $300.00 |
| H-10 column | 11 columns | 21 lbs. | 14⅞x 9½x5¾ | 350.00 |
| T-12 column | 13 columns | 24¼ lbs. | 14⅞x11 x5¾ | 400.00 |

Fraction models, equipped for handling fourth or eighth fractions, with key tops marked with fraction designation or with numerator only (such as 3 instead of ¾).....No extra charge

Fraction models, equipped for handling sixteenth fractions, when key tops are marked with numerator only.....no extra charge
When key tops are marked with fraction designation....$3.00 per key extra

Fraction models, equipped for handling twelfth fractions, when key tops are marked with numerator only, extra.....$33.00
When key tops are marked with fraction designation.....no extra charge

Fraction models equipped to handle two different combinations of fractions in different columns may be had, such as, twelfths and eighths; double twelfths; twelfths and sixteenths; sixteenths and twelfths; sixteenths and fourths; sixteenths and eighths; twentieths and twelfths; twentieths, twelfths and fourths; twentieths; twelfths and eighths; double sixtieths; also single fractions to twenieths, fortieths, sixtieths, eightieths, etc.

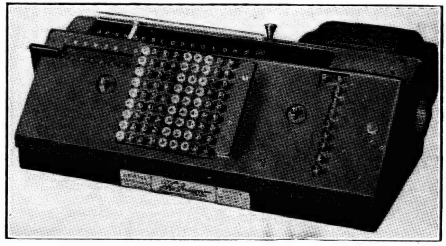
## DEMOS

Manufactured and sold by Theodore Muggli, 93 Bahnhofstrasse, Zurich, Switzerland. Has no organized representation in the United States.

A rotary type of calculating machine, having a lever set keyboard, crank operated, equipped with proof dials showing amount of set-up on keyboard, and multiplier and product dials. Capacity 9x8x14 inches, base size 12x6 inches.

## ENSIGN

Made by Ensign Company, Brighton District, Boston, Massachusetts. Sold through specially appointed dealers and agents.



An electrically operated high speed, automatic computing machine, compactly designed for desk use, having a full button-key primary keyboard, a sliding carriage containing a set of dials called the "Result Meter"; a second set of dials, called the "Proof Meter", located immediately under the carriage and to the left of the keyboard.

An auxiliary or secondary keyboard having ten keys (1 to 9 and 0) arranged in two columns, used in multiplication and division, provides for setting the machine to multiply or divide the desired number of times in each column, without further attention by the operator. The usual necessity of counting the revolutions of the machine is not required. To multiply, an amount is set upon the primary keyboard, the number of times to be multiplied is designated on the secondary keyboard. A motor bar takes the place of a crank. The machine automatically stops when the proper number of revolutions, as designated, have been made.

Subtraction is accomplished with complements. Control equipment consists of constant key, (locks a constant multiplicand on keyboard) clearing lever, (clearing keyboard and all dials at one operation), carriage shifter knob; dividing key, controlling carriage shift; decimal pointers.

Model 97, Capacity, 9x7x16, electrically operated ..... $450.00

Model 75, Capacity, 7x5x12, electrically operated ..... 500.00

## FACIT

Made by Axel Wibel, Incorporated, Stockholm, Sweden.

This machine is, or soon will be, placed on the American market. It is a high speed computing machine of the Odhner type, lever-set, crank operated; movable carriage equipped with one set of accumulator dials; second set of dials appears directly above the keyboard. Similar in its appearance and operation to other machines of the direct acting design, such as the lever-set Marchant, etc.

### Specifications

**Dimensions:** Base size 12¾ inches long by 6 inches wide; height 6 1/3 inches; weight without carrying case, 14 pounds. **Control equipment** consists of resetting devices for both accumulator dials; right and left hand carriage shifting devices; interlocking safety devices providing against misoperation of the machine, including a bell warning for over-operation in division.

### Models and Prices

Made in several sizes, the most popular having a product capacity of 13 places ..... $325.00

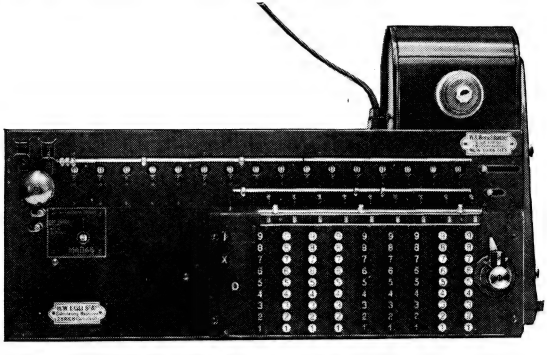
## LIPSIA

Manufactured and sold by C. Holzapfel & Cie, Lipsia Works, Leipzig 41 Er, Germany. Has no organized representation in the United States.

Made in standard and miniature models; 9 and 10 keyboard columns; 13, 17 and 20 places in product dials. Of rotary construction, lever set, crank operated; very similar to the Brunsviga.

## THE "MADAS"

Made by Hans W. Egli, Zurich, Switzerland. Sold in the United States by W. A. Morschhauser, sole distributor, 1 Madison Avenue, New York City.



A flat bed crank operated type of calculator, particularly adapted for handling problems in division, but it will also add, subtract or multiply. Made in hand and electrically operated models and with either button-key keyboard or lever-set slideboard.

Division is automatic: the action of the crank is continuous and the carriage shifts automatically.

An indicator positions the mechanism to add, subtract, multiply or divide. Crank turns in one direction only. Knobs mounted on the carriage, allow for setting amounts direct on dials without transferring from the keyboard. An extra set of check dials show keyboard set-up.

### Models and Prices

| Capacity | Slideboard | | Keyboard | |
|---|---|---|---|---|
| | Hand | Electric | Hand | Electric |
| 8x9x16 | $400.00 | ..... | ..... | ..... |
| 9x9x16 | ..... | 600.00 | 500.00 | 725.00 |

All prices F.O.B. New York.

## JOKEL'S CURRENCY CONVERSION TABLES

Published by the Century Company, New York City. Sold through leading bookstores

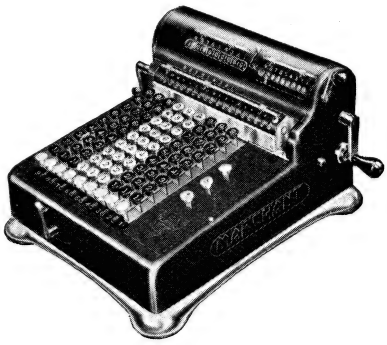
A volume of fixed tables for the conversion of currency of any country (British currency or currencies based on the decimal system, such as francs, lires, etc.), into dollars and cents, or dollars and cents into the denominations of any foreign currency.

The arrangement provides for conversion at varying rates of exchange. Separate tables are given for a wide range of exchange fluctuations, graduated in fractional parts of a cent. The corresponding foreign exchange value of each unit of denomination of the currency to be converted is given in parallel columns, and additional columns show one hundred times and one thousand times the value of each unit. Even amounts are arranged in columns down the page in order of sequence, from $1.00 to $100.00 and from 1c to 100c; or from 1 pound to 100 pounds, from 1 shilling to 19 shillings and from 1 pence to 11 pence. Thus, any amount may be divided and converted in sections which can afterwards be added together to make the whole.

To facilitate the checking of problems, a page for the conversion of foreign currency into dollars, faces the page for conversion of dollars into foreign currency, with the same exchange rate heading both pages. Price complete for all standard currencies.....$27.50

## MARCHANT

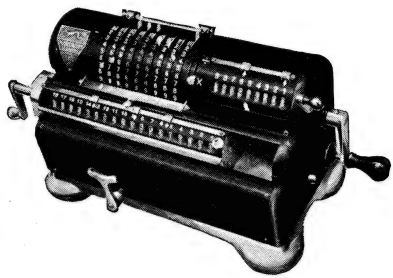
Made by the Marchant Calculating Machine Company. Executive offices and factory: Emeryville, Oakland, California. Sold by their own salesmen. Marchant high speed computing machines are made in both lever-set and full button-key keyboard models.




The design, operation and controls of both machines are the same with the exception of the Keyboard. Both machines follow the rotary or direct action principal of construction, being crank operated and having a movable carriage in which is contained the product (the larger set of) dials. The multiplier or quotient (the smaller set of) dials appear above the product carriage. The keyboard check dials appear directly above the keyboard in direct horizontal line with register or quotient dials.

When the desired figures are set in the machine by the means of keys or levers, addition or multiplication is performed by turning the operating handle **forward,** subtraction or division by turning the operating handle **backward.** The levers of the lever-set models do not rotate when the machine is operated. All models have but one crank stopping place (at the lowest point of revolution.)

## MARCHANT—continued



The present models, placed on the market early in 1923, supersede several lever-set models manufactured and sold by the same company since 1911.

A feature of design is the **"carry-over" mechanism** in the multiplier dial. Each dial has a carry to the next dial, making it independent of the carriage position with reference to the keyboard columns. An indicator lever, having a position for subtracting and one for multiplying, controls these dials so that they may be made to travel always in the same direction for all problems. The combination of the indicator lever and the carry-over mechanism is considered an innovation in machines of this kind and is claimed to reduce the number of operations and permit short cuts heretofore impossible. All capacities of the keyboard models are built on the same size frame, occupy 114 square inches of desk space, and are of sectional construction, providing for the addition of extra keyboard columns and extra places in the dials to increase the capacity of the smaller machines whenever desired.

### Specifications

All models have a carriage shifting lever, (at front of machine) for shifting the carriage in a continuous lateral direction to right or left; release rod, situated near the operating crank, allows the carriage to be shifted several spaces at one operation, if required; individual column release; master keyboard clearing device; individual clear out cranks for each set of dials; decimal pointers for all dials and keyboard; carriage position indicator; visible check dial showing set-up during complete operation; positive locking devices operating automatically on all possible misoperations by the operator; ball bearing construction throughout.

Special features of the full button-key keyboard models include: Flexible keyboard; standardized sectional construction, above referred to; individual column release keys; repeat, non-repeat and master keyboard correction keys.

**Electrically operated button keyboard model,** was announced in February, 1924. It is the Model KC machine with an electric motor, mounted on the rear. It has two touch bars on the keyboard, one marked "plus" and the other "minus", which when depressed drive the machine forward or backward to add or subtract.

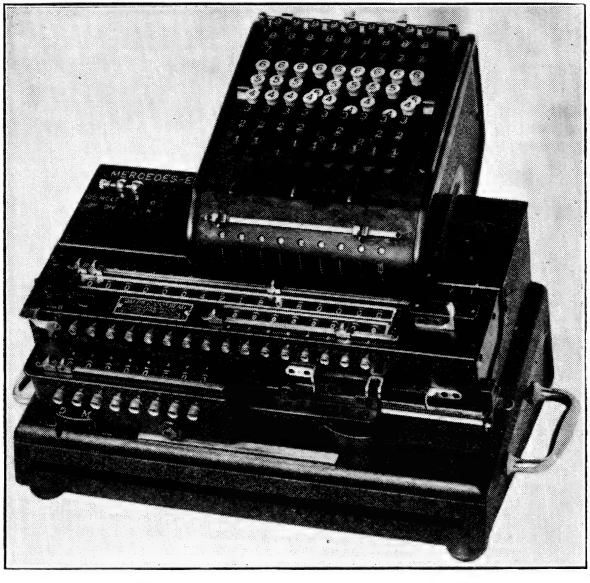
(This description continued on Page 86)

### Models and Prices

| Model | Capacity | Base Size | Weight | |
|---|---|---|---|---|
| X-L lever-set keyboard | 9x9x18 | 10x7 | 15 pounds | $350.00 |
| K-A button keyboard | 6x6x12 | 10x12 | 21 pounds | 200.00 |
| K-B button keyboard | 8x8x16 | 10x12 | 22 pounds | 300.00 |
| K-C button keyboard | 9x9x18 | 10x12 | 23 pounds | 350.00 |
| Electrically operated | 9x9x18 | 10x12 | | 500.00 |

## MERCEDES
### (Mercedes-Euklid)

Made in Germany. Distributed in the United States by Ralph C. Coxhead. General offices, 53d floor Woolworth Building, New York City.



**Model No. 8, Automatic Electric**

The Mercedes Calculating Machine embodies advanced principles of construction that provide for exceptional speed and facility in accomplishing involved mathematical problems. It accomplishes division automatically and multiplication by the abbreviated method, with proof. It is made in two different types; those having full button-key keyboards and those having flat bed, lever-set keyboards with levers operating in slides. It is equipped with a sliding carriage containing two sets of indicator dials. An auxiliary set of dials is provided to indicate the amount of keyboard set-up. It is crank (hand or electric) operated.

### General Specifications

**Dimensions:** All models are exceptionally compact, being approximately 9x16 inches in base area. The lightest model weighs 30 pounds; weight and size of other models is in proportion to their capacity, construction, etc. **Carriage** is shifted semi-automatically, on hand operated models, by the depression of a key; on electric models, the shift is fully auto-

## MERCEDES—continued

matic in problems of multiplication and division. Knobs are provided for setting amount on dials direct without transferring them from the keyboard. **Operating equipment:** Clearing devices on all register dials; automatic locks and safety devices protect the mechanism from misoperation.

The crank handle of hand operated models, stops automatically in division when the proper number of turns have been made. On electric models, it is only necessary to set up the two factors of a multiplication or division problem and the machine accomplishes the entire procedure of calculating the answer automatically.

While the machine is engaged in computing a multiplication, the operator may set up the next multiplier. In division, the operator may be writing down the quotient as it is produced.

### Models and Prices

| Model | | Price |
|---|---|---|
| No. 1 | Hand operated, lever set keyboard; semi-automatic in division and multiplies by the abbreviated method. Equipped with accumulating mechanism in both dials; clears with one stroke; principally used for multiplication and division, although addition and subtraction are accomplished rapidly. 9 x 8 x 16 | $ 375.00 |
| No. 4 | Is the same as Model No. 1, but is equipped with a standard 81 button-key keyboard. 9 x 8 x 16 | 550.00 |
| No. 5 | Triplex. Hand operated, lever-set keyboard. Performs all the ordinary computations of Model No. 1, but is also equipped with additional dials for accumulating group totals, etc. It has a total of five dials. Any number of multiplications, additions or subtractions can be made and each separate answer obtained in one dial, while a second dial will carry the accumulated total of all computations, making it unnecessary to combine the same separate results after the computations have been completed. Capacity, 9 x 8 x 16 | 850.00 |
| No. 7 | Is an entirely automatic, electrically operated, lever-set keyboard machine wherein it is only necessary to set up two numbers, the machine automatically starting the motor and producing the result without further effort on the part of the operator. This is true either in multiplication or division, and some combined operations where it is necessary to perform multiplication and division simultaneously, or other combinations of these operations. It is a portable desk machine. Capacity, 9 x 8 x 16 | 850.00 |
| No. 7-13 | Is the same as Model No. 7, with the exception that its capacity is 13 x 14 x 16 | 950.00 |
| No. 8 | Is identical with Model No. 7, but is equipped with a standard 81 button-key keyboard. 9 x 8 x 16 | 1,050.00 |
| No. 8-13 | Is the same as Model No. 8, but with capacity of 13 x 8 x 16 | 1,200.00 |

## MECHANICAL ACCOUNTANT

Made by the Mechanical Accountant Company, Providence, Rhode Island. Sold direct by mail.

A portable, key driven adding and calculating machine, operating directly from the depression of the keys. Models of the present line are of duplex construction, having the capacity to add, receive and carry in adjoining columns, simultaneously. (Previous models known as Simplex models, could be operated in but one column at one time.) In its construction, the machine relies on gears rather than on a series of springs to drive its mechanism.

Amounts are accumulated in a set of dials directly above the keyboard. A clearing lever having a stroke of about one-quarter inch, clears all totals simultaneously.

Small models have keys from 1 to 5 only, in each column, being constructed on the theory that operators prefer to work on the first five keys of each column; that increased speed and accuracy result by the elimination of the higher keys. Other models have full keyboards.

### Models and Prices

| Model | Capacity Keyboard | Capacity Total | Number of keys in each column | Weight | Price |
|---|---|---|---|---|---|
| R | 6 | 6 | 5 | 5 lbs. | $125.00 |
| | 8 | 9 | 5 | ..... | 150.00 |
| | 10 | 11 | 5 | ..... | 175.00 |
| | 12 | 13 | 5 | ..... | 225.00 |
| L | 9 | 10 | 9 | 10 lbs. | 175.00 |
| | 11 | 12 | 9 | ..... | 200.00 |
| | 13 | 14 | 9 | ..... | 250.00 |

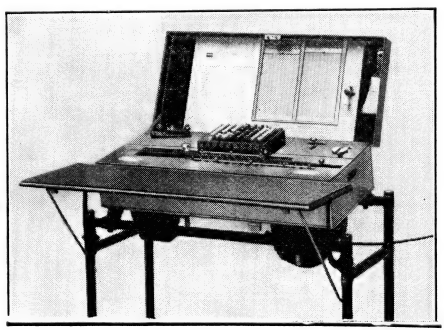
Models are also supplied equipped to handle fractions.

## THE "MILLIONAIRE"

Made by Hans W. Egli, Zurich, Switzerland. Sold in the United States by W. A. Morschhauser, sole distributor, 1 Madison Avenue, New York City.

A highly developed calculating machine of the flat bed type. Made in both hand (crank) and electrically operated models and with either button-key keyboards or lever-set slideboards.

A feature of its equipment and operation, is its ability to combine in single revolutions of the operating crank, multiple operations of the repeating mechanism. A lever situated to the left of the keyboard operating in connection with a scale having stops numbered



## THE MILLIONAIRE—continued

from one to nine, acts as a secondary keyboard to set the mechanism so that the operation for each column of a problem in mulplication or division, is completed by a single revolution of the operating handle. The carriage shifts automatically with the turning of the crank. Example: To multiply a number that has been set up on the keyboard, by 25, the lever is set at 2 and the operating crank turned but once. The carriage automatically shifts and the lever is then set at 5 and the operating handle turned once more to complete the answer.

An indicator positions the mechanism to add, subtract, multiply or divide. Crank turns in one direction only. Knobs mounted on the carriage, allow for setting amounts direct on dials without transferring from the keyboard.

### Models and Prices

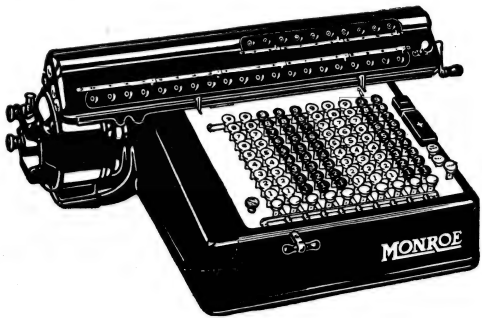
| Capacity | Slideboard | | Keyboard | |
|---|---|---|---|---|
| | Hand | Electric | Hand | Electric |
| 6x6x12 | $475.00 | ..... | 575.00 | ..... |
| 8x8x16 | 575.00 | 835.00 | 690.00 | 950.00 |
| 10x10x20 | 700.00 | 975.00 | 825.00 | 1100.00 |

Tubular steel stands included in price of electric models. $17.00 extra on hand models. All prices F.O.B. New York.

## MONROE

Made by the Monroe Calculating Machine Company. General offices, Woolworth Building, New York City. Sold by their own salesmen, operating through sales agencies located at all principal points in the United States and throughout the World.

The Monroe is a portable non-listing machine designed for high speed calculating, involving multiplication, addition, subtraction and division.




The construction is that of a machine having a full standard button-key keyboard and a movable carriage containing two sets of number dials, one above the other, on which the several factors of calculating are accumulated. It is key set and either crank or electrically operated.

## MONROE—continued

### Specifications

The present line of machines, known as the Model K, has been on the market since the latter part of 1921 and embodies many improvements over the previous models that have been manufactured at different times since 1911. The Model K utilizes a sloping keyboard with key stems of uniform height. Previous models had a keyboard with a flat bed and the slope was obtained by varying the lengths of the key stems in each column. The new design of keyboard improves the speed and ease of making the set-up. Shortly after the announcement of the K model, a motor operated machine of the same model, called the "Automatic," was put on the market.

Machines now being manufactured, differ in keyboard capacity and number of places in carriage accumulators. The design and control equipment are standard on all models.

**Dimensions:** Exclusive of carriage overhang and carriage travel, the machine occupies approximately one square foot of desk space. Weight 26 to 30 pounds according to capacity. **Keyboard:** Standard flexible with separate release keys for each column. **Dials:** The lower set of carriage dials shows the result in addition and multiplication, the minuend or remainder in subtraction and the dividend or remainder in division. The upper set shows the multiplier in multiplication and the quotient or result in division. **Auxiliary equipment** consists of carriage shifting device (shifting the carriage to right or left one place at a time) repeat, non-repeat, master keyboard clear-out key, one hand clear-out crank for carriage dials; item counter (called the "register key"); pointing off device for decimal work. **Operation:** Hand or motor. Hand operated machines, add and multiply on the forward turn of the crank and subtract and divide on the backward turn, the stopping place of the crank always being the same. **Automatic machines** are electrically operated, having operating touch bars, one for addition and multiplication and one for subtraction and division, which take the place of the crank. The automatic feature includes not only the motor, but entirely different driving and control mechanisms, that represent a distinct design, rather than a motor equipment added to a standard model.

**Fraction Machines** add or subtract fractions and show totals as whole numbers and fractions. They also handle all regular calculations, except that one place in the lower carriage dials is not available.

**British Currency Models** are both hand and electrically operated. They combine all the advantages of a direct adding and subtracting machine in pounds, shillings, pence and farthings and can be immediately converted to a standard decimal basis, but with reduced capacity, by moving the carriage to the right out of the shillings, pence and farthings columns position.

*All data in this DIGEST has been compiled after much research, investigation and study. You will benefit by studying its pages.*

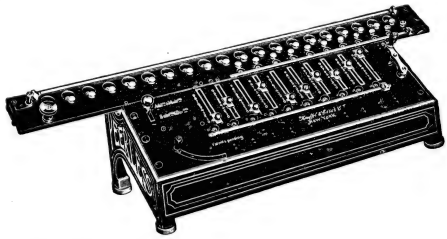
## MONROE—continued
### Models and Prices

| Model | Capacity | Crank Operated Weight | Crank Operated Price | Electrically Operated Weight | Electrically Operated Price |
|---|---|---|---|---|---|
| K-20 Standard | 10x10x20 | 30 lbs. | $400.00 | 48 lbs. | $600.00 |
| K-16 Standard | 8x8x16 | 26 lbs. | 300.00 | 43 lbs. | 500.00 |
| K-12 Standard | 6x6x12 | 23 lbs. | 200.00 | | Not made |
| KF-8 Fraction | equipped for handling eighth fractions, on models K-20 and K-16, extra | | $25.00 | | 25.00 |
| | On model K-12, extra..... | | 25.00 | | Not made |
| KF-4 Fraction | equipped for handling fourth fractions, on models K-20 and K-16, extra | | 25.00 | | 25.00 |
| | On model K-12, extra..... | | 25.00 | | Not made |
| K-Sterling | equipped for handling British currency in pounds, shillings, pence and farthings. On models K-20, K-16 and K-12, extra... | | 25.00 | | Not made |
| Extra carry mechanism, with extra dials | for carrying to three places beyond regular capacity, on any model, including fraction and British Currency models, extra | | 25.00 | | Not made |

## PEERLESS RECKONING MACHINE
### (Improved Design)

Made in Germany. Sold in the United States by Keuffel and Esser Company, general offices and factories, Hoboken, New Jersey.

Models of this machine have been marketed by the same distributors for many years. The present improved design is similar to the old in essential mechanical features, operation and controls, the principal change being in its appearance. Previous models were enclosed in a wooden cabinet; the present design requires no cabinet.



### Specifications

**Keyboard** is of the slideboard type, with check dials immediately below key levers, to show set-up. Keyboard clearing lever (at lower left corner). **Carriage:** Sliding, with two sets of dials (Multiplier and Product), equipped with knobs to set items direct. Right and left hand dial clearing levers. **Control equipment:** One way crank; control lever sets mechanism to add or subtract.

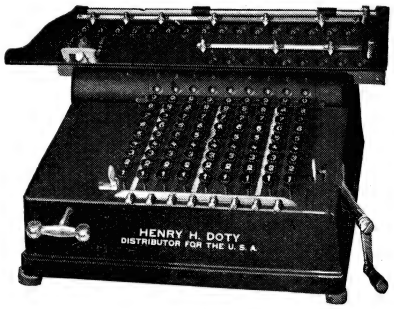
### Models and Prices

| Model | Capacity | Price |
|---|---|---|
| 4006 | 8x9x16, hand operated only..... | $400.00 |

## RECORD CALCULATOR

Made by the Carl Lindstrom Company, Berlin Germany. Sold in the United States by the Doty Business Machines Company, 537 South Dearborn Street, Chicago, Illinois.

The Record is a portable high speed computing machine having a full button-key, flexible keyboard and a semi-automatic sliding carriage containing two sets of accumulator dials. It is made in both hand and electrically operated models.




**The motor drive attachment** can be affixed to hand driven models. It includes a secondary keyboard or additional set of keys, running from one to nine, inserted at the left of the keyboard. Any desired number of revolutions of the mechanism can be obtained automatically by depressing the proper key on the secondary keyboard. When the operation is completed the key is automatically returned to its original position.

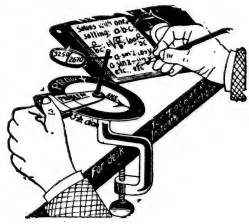
### Specifications

**Dimensions:** Base 12 inches wide by 14 inches long, exclusive of carriage overhang and carriage travel. **Keyboard:** Full flexible, button-key equipped with selective column decimal indicators. **Dials:** The upper set of accumulator dials in the carriage, shows the result in multiplication or addition and the number to be divided in division. The lower set of dials shows the multiplier in multiplication or the result in division. An auxiliary set of dials immediately above the keyboard, shows the amount of each item as it is set up on the keyboard. **Operating Equipment** consists of master keyboard clear-out key, carriage dial clear-out levers, pointing-off devices for decimal work, item counter; carriage shifting lever, located on the left front of the machine, provides for shifting the carriage one place at a time; reversing lever (situated at left of carriage) sets machine to add and multiply or subtract and divide. Reversing lever may also be used as a shifting lever by raising carriage for shifting one or more places at a time. **Operation:** Hand or motor. Operating crank is set at a convenient angle for right hand operation; turns in one direction only, stopping always at the same position.

### Models and Prices

| Model | Capacity | Weight | Price | Model | Capacity | Weight | Price |
|---|---|---|---|---|---|---|---|
| No. 2 | 9x9x16 | 30 lbs. | $300.00 | No. 4 | 10x10x20 (Special) | 34 lbs. | $400.00 |
| No. 3 | 9x9x18 | 32 lbs. | 350.00 | No. 5 | 12x12x24 (Special) | 38 lbs. | 600.00 |
| Electric drive, extra | | | 200.00 | | | | |

## ROSS RAPID COMPUTER



Made by the Computer Manufacturing Company, 340 Sansome Street, San Francisco, California.

The Ross Rapid Computer is designed to supersede the slide rule in all calculations. By an arrangement of scales, it multiplies and divides instantly. A problem is set by turning two sealed dials approximating the setting of a slide rule; the answer and proof appear automatically. Like the slide rule, this device does not add.

### Specifications

It is designed to be used in the hand or to be clamped to the desk, being instantly convertible for desk or pocket use; it is 5 inches in diameter; fitted with adjustable magnifier, making the readings appear larger than ordinary typewriting. It is fitted in a carrying case measuring 5x7 inches that also forms a loose leaf book for the accountant or engineer.

### Models and Prices

Price complete including magnifier, desk clamp and carrying case....$17.75
Computer only ..... 9.75

## SANDERS

Manufactured and sold by Nico Sanders. Main office and factory, 92 Rue de Richelieu, Paris, France. Has no organized representation in the United States.

A highly developed rotary type of calculating machine; lever set, crank (electrically) operated. Capacity, 9x12x13 with extra dials for duplex operation.

## TRIUMPHATOR

Manufactured and sold by Triumphator Works, Ltd., Leipzig-Molkau, Germany. Has no organized representation in the United States.

A rotary type, lever set, crank operated, high speed calculating machine, similar in many respects to the Brunsviga and other machines of this design. Made in 13 to 20 places product capacities.

List prices range from $250.00 to $350.00.

## TIM AND UNITAS

Manufactured by Ludwig Spitz & Company, Berlin, Germany. Sold throughout North America by the Times Into Company, 332 South Michigan Avenue, Chicago, Illinois.

Rotary types of high speed calculating machines, made in both lever set (slideboard type) and full key keyboard models. The Tim is the standard model; the Unitas is a tri-plex model.

## TIM AND UNITAS—continued

The design and operation of both machines are the same; they are crank operated, have a movable carriage in which is contained the product (larger set of dials) and the multiplier or quotient (smaller set of dials). Keyboard check dials appear to the left of each column. The direction of the crank movement is the same for all operations. A control lever to the left of the keyboard, sets the machine to add or multiply when in one position and subtract or divide when in a reverse position. Levers situated under each column of the keyboard provide a means of clearing each column individually. The clearing lever for the extreme right hand column, when operated in a reverse direction, and an extra lever at the left of the keyboard, each provide for general keyboard correction.

The carriage is shifted one or more places at a time by lifting and sliding to the position desired; all carriage dials are cleared by resetting levers, one for each set.

All parts are machined; no stampings are used. The operation is almost noiseless. The electric drive is a separate attachment and may be added to any machine sold since 1920, and to new machines.

**The Unitas** is the same in construction and operation as the TIM, except that it has an extra set of dials located above the product dials, mounted in an individual slide or carriage and may be set at any position independently of the two other sets of dials. This third set of dials accumulates grand totals and products, and is useful in extending individual invoices, at the same time accumulating a grand total or in building up calculations as individual shares are figured in problems of pro-rating. It also serves as a proof dial in division, in that as the amount of the dividend is reduced (in one set of dials) it is built up in proportion (multiplied) in the third set of dials, thus offering simultaneous multiplication and division.

### Models and Prices

| Model | Capacity | Keyboard Model | Slideboard Model |
|---|---|---|---|
| Tim II | 8x 7x12 | $350.00 | $300.00 |
| Tim III | 8x 9x16 | 400.00 | 350.00 |
| Tim V | 10x11x20 | 500.00 | 450.00 |
| Unitas III | 8x 9x16 | 600.00 | 550.00 |

Electric drive, extra on any model.....$200.00

## MARCHANT—continued

(Continued from Page 76)

An auxiliary or secondary keyboard having ten keys (1 to 9 and a release key marked 0), arranged in a column at the extreme right side of the keyboard is used in multiplication or division to set the mechanism to rotate automatically and repeat the amount set up on the regular keyboard, the number of times desired, making it unnecessary for the operator to count the number of revolutions. While the machine is performing such revolutions, the carriage shift and all other controls are locked. The shift of the carriage is not automatic, being the same as on hand operated models.

# Addressing Machines

## ADDRESSING MACHINE HISTORY

The original addressing machine invented in 1878 by Frank Drayton Belknap, founder of the Belknap, now the Rapid Addressing Machine Company, was designed as an aid in addressing envelopes in an establishment, similar to a present day letter service shop, which he conducted at that time.

The characters for names and addresses were cut on a strip of paper by pin point type, set in individual dies. Perforations on the side, similar to the perforations on the film for moving pictures, afforded a means of drawing the strip through the machine. Later, separate cards made up of a piece of parchment paper pasted to a cardboard frame, were used and from which the address cards used on stencil types of addressing machines today, are improvements.

In 1892, Joseph S. Duncan, now President of the Addressograph Company, invented a machine that imprinted names and addresses from rubber type, torn from rubber stamps, and glued on a hexagonal block of wood, which revolved, advancing a new name to the printing point and inking the type at each operation. He later designed a metal frame in which might be set individual pieces of rubber type, to make up the address, which provided also, for the insertion of a proof or index card. of the name and address.

Later came the Graphotype, a machine for embossing typewriter style type faces on metal plates, affording the principle now used by the Addressograph and similar systems.

In 1907, Stirling Elliott, founder of the Elliott Addressing Machine Company, devised a one-piece all fibre address card combining all the practical advantages of an address card and an index card. Addresses were cut by a special stencil cutting machine.

## ADDRESSING MACHINE CLASSIFICATIONS

Addressing machines are divided into two general classes:

(1) Those making impressions by means of fibre or tissue stencils through which ink is forced to the surface of the envelope or other form to be addressed.

(2) Those printing from type, including machines using metal plates on which characters are embossed.

### Stencil Addressers

All manufacturers making stencil types of addressing machines provide two different kinds of stencil frames. The stencil itself (the fibrous tissue panel on which the address is cut), differs very little in general appearance as between the different makes. The basis of




A Record Card Frame and Stencil

## ADDRESSING MACHINE CLASSIFICATIONS—continued

the stencil is a fibrous and almost transparent paper, of a limp texture, made in Japan and known to the trade as Yoshino paper. It is treated with a combination of chemicals to toughen and give it other qualities necessary for perfect cutting and durability. The grade and number of plys of paper, the method of treatment, the kind of chemicals used and the effect produced on the tissue represents the main differences between each make.

The purpose of the frame to which the tissue stencil is attached, is to provide the necessary stiffening to insure proper feeding and travel through the machine. On addressers equipped with a selector device, the frame also acts as a means by which the selection is governed.

**Record card frames,** also called Index frames, provide a form printed on their upper portion, for the recording of figures of accounts, or other memoranda generally required in connection with customers accounts.

**Regular frames** carry the address panel only and do not provide for the writing of memoranda on the frame, except that possible on the small (approximately ¼") upper and lower margins.

Each maker provides a separate addressing unit for each size of stencil. Addressers taking regular stencils will not accommodate the record type, nor will record type models accommodate regular size stencils.

### Type Addressers

All makes, with but one or two exceptions, print from metal plates on which the characters are embossed by special machines. Each company provides in their home and branch offices a service arrangement for embossing plates for their customers.

The plates used in the different machines of this type, vary considerably, and are fully described in connection with each make.

### Publication Addressers

Practically all makers of addressing machines provide one or more specially constructed models for the addressing of newspapers, magazines and other publications, at high speed. Space does not permit of giving the complete specifications of such machines. Insofar as it has been possible, the functions and capabilities of each make and model, are fully described. The means by which they accomplish their different functions, can perhaps, be explained to better satisfaction of the user or prospective purchaser, by the specially trained staff of each company's own engineers.

## APPLICATIONS OF ADDRESSING MACHINES

The wide variety of applications of addressing machines for other than envelope addressing, seems to make the term "addressing machines" a misnomer. "Imprinting Machines" would perhaps better fit their wide range of usefulness.

The original and most prominent advantage, of course, is the speed with which names and addresses may be imprinted on envelopes, postcards, circulars, etc., (ten to thirty times faster than pen or typewriter), with the assurance of unfailing accuracy, neatness and legibility.

But, the average executive may perhaps overlook the many other advantages afforded in practically every stage of business routine.

### Selling:

By speeding out "fill-in" letters, individually addressed circulars, price lists, bulletins, etc., to prospects, customers, salesmen and dealers.

## APPLICATIONS OF ADDRESSING MACHINES—continued

Machines printing through a ribbon from metal plates provide fill-ins that match perfectly, the body of forms produced by the Multigraph, the Multicolor Press, and other printed-through-ribbon processes. Stencil printers match forms produced by stencil duplicating machines.

Cut-off devices provide a means by which the salutation or other data, (sometimes included on the plate or stencil), or if desired, part of the address itself, may be eliminated in printing. The design and functioning of the cut-off device is distinctive on each type of machine. Some machines may be equipped to eliminate any part of the address or other data; others are limited in the amount and position of the cut-off.

### Recording:

The imprinting of data other than names and addresses is another prominent use of addressing equipment. Several lines, comprising an entire brief message, (limited by the size and capacity of the stencil or plate), may be placed easily and quickly on office records, shop and house orders, inventory records, cost tickets, dealers' advertising, quotations, etc.

### Shipping:

Tags, labels, invoices and waybills may be addressed, each with a different or the same address, at a speed many times that possible with pen or typewriter.

### Routing:

Laundries and similar establishments, having regular routes for their salesmen or collectors, save time and provide accuracy by heading up their route tickets on addressing machines. Shop routing may be similarly simplified.

### Collecting:

Heading up and dating statements, bills and notices, (for collectors or for mailing), and getting them out on time.

### Disbursing:

Time cards, pay envelopes and checks may be imprinted with employee's name and assigned number. Some machines are equipped, in addition, to print current dates.

All makes may be equipped with lister attachments by which the names of employees may be listed uniformly on separate lines, in separate columns, on a large form or sheet for current paying lists or yearly record purposes.

Checks may be filled in with the name of the payee or other information. In some instances, such as for the issuing of dividends or bonus checks, it is also practicable to fill in the amounts.

### Systems:

In the sale of addressing machines, many manufacturers lay as much or more stress on the systems which the use of their machines make possible, as they do on the performance of the machines themselves. Many ingenious systems have been devised for the filing of stencils to provide speed, unfailing accuracy and absolute control in the handling of large numbers of names.

During the past few years extensive popularity has been accorded the practice of combining records, usually carried on ledger, index or other cards, with the address plate or stencil, so that such information or statistics may be available in one file, and at the time of addressing. Many concerns now keep their records of accounts receivable on such cards, which provide direct, up-to-the-minute information by which the sending out of statements, dunning notices, etc., is governed.

### Classifying:

Selector devices, either automatic or visual, provide a means by which only certain addresses may be imprinted as the plates or stencils are run through the machine. It is not always desirable to imprint every address for which there is a plate

## APPLICATIONS OF ADDRESSING MACHINES—continued

or stencil. Certain mailings of form letters, circulars, etc., may be intended for just certain classifications, such as by age, sex, occupation, account standing, or states and cities. It is possible to provide several classifications, but still have all frames in one file, or by general geographical, alphabetical or numerical arrangement. Many other uses, such as skipping absentees when running payroll forms, skipping inactive accounts when running statements, etc., are also possible.

**Automatic Selectors,** by means of mechanical devices actuated by metal tabs, perforations or mortises in the plates or cards, govern the printing of desired names and the skipping of those not wanted.

**"Visual Selectivity"** is a term used by some manufacturers in connection with a method by which the operator at the time of addressing, as each frame is brought to the printing point, selects or skips addresses, according to the information or statistics on the record cards attached to the address frames. This method, while not automatic, is claimed to be equally as effective and dependable, in that the time necessary to prepare the frames in advance for mechanical selection is eliminated, and it is also claimed that the element of human error is no greater in selecting at the time of imprinting, than it is in the preparation of frames for automatic selection; and because visual selection is governed by definite, but not permanent control, an error made on one run is not likely to be repeated on the next.

## ADDRESSOGRAPH

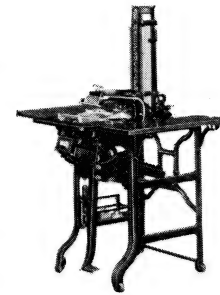
Made by the Addressograph Company, Peoria and West Van Buren Streets, Chicago, Illinois. Sold by their own sales force through branch offices in principal cities throughout the world.

The Addressograph prints from embossed metal plates. The equipment consists of

1—The address plate.

2—The means of embossing the address plate —a machine called the Graphotype.

3—The addressing machine itself, called the Addressograph.



Graphotypes are either sold or rented. Service stations are also maintained by the company at each branch office, to emboss plates for users of Addressographs who do not desire to purchase embossing equipment.

By means of attachments and inbuilt devices, a wide range of performance is possible. Some of the attachments and their uses are:

**Automatic Selector:** The selector automatically prints desired names and skips those not wanted. All address plates go through the machine and are automatically refiled in their original order. The automatic selector is controlled from removable, vertical filing tabs inserted in sockets in the address plate or frame. Selection is mechanical on foot and motor operated models, and visual on hand models.

**Cut-off:** Permits elimination of any part of the address which is not desired printed, such as to eliminate the salutation when addressing en-

## ADDRESSOGRAPH—continued

velopes from address plates that have been made up to fill in form letters; or, in making up payroll forms, to eliminate certain data embossed on the plates, which is not desired to be shown on time card, pay envelope or check.

**Dater:** Dates form letters, statements, time cards, etc., at the same time they are addressed or filled in. The dater for form letters or statements prints the date in exactly the position it is usually printed by a typewriter. The dater for time cards prints the date just above the name on narrow time cards, or beside the name on wider cards, if desired.

**Numberer:** An attachment to print numbers either consecutively or in duplicate or triplicate, from 1 to 199,999.

**Duplicater:** Provides for two impressions from each address plate. Triplicator provides three impressions; quadruplicator provides four impressions.

**Repeater:** Stops any desired plate at the printing point to provide any number of impressions. Address plates can be embossed to print a return address in the upper left hand corner of envelope. Brief messages can be embossed on address plates and printed on cards, catalogs, etc.

**Automatic ejector:** May be attached to hand models. This attachment automatically ejects cards and envelopes into a box at the side of the machine as they are addressed.

**Lister:** The lister automatically lists and spaces on ruled or plain sheets. It lists the names, amounts or other data in columns and exactly on the line if desired. Listers are also furnished for checks in strips or gangs.

**Signal:** An attachment notifying the operator by ringing a bell when certain plates arrive at the printing position. When listing names, numbers, etc., on payroll sheets, it signals when the end of a department is reached. When heading up such forms as laundry slips, etc., the operator is notified when the bell rings, to place a certain kind of slip on the machine, such as wet wash, dry wash, etc.

**Spacer:** Permits leaving blank lines when listing sheets, without the necessity of placing blank plates in the file.

**Tag Feed:** An attachment for hand models which feeds and addresses shipping tags in gangs or strips at a speed of 100 per minute.

**Carbon copies** can be made the same as with a typewriter.

## Address Plates

The address plates are small strips of zinc alloy on which the address is embossed. They are malleable, to permit of correcting errors in embossing, or revising part of an address, by flattening out the characters to be deleted and emboss new type over the old. The capacity of these address plates is from three to eight lines of embossing.

The style C address plate is the simplest and the complete plate. It is stamped out in one piece and permits of a one-line index card in the top if desired. The C plate has a capacity of six lines of typewriter style type. Thus a three-line name and address can be embossed on this plate and when a change is made the old name is flattened down and the new name written on the unused portion of the plate.



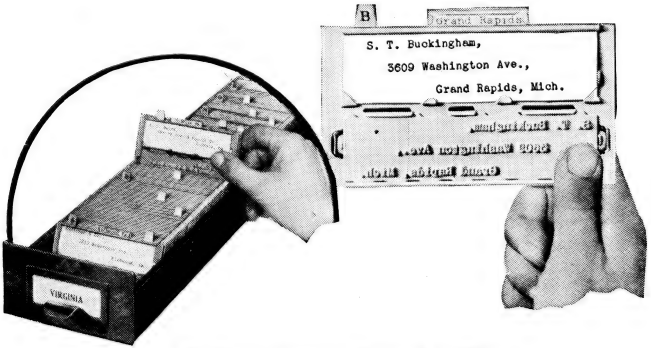

**Style C Plate**

## ADDRESSOGRAPH—continued

The style B address plate is a combination of a blank plate of malleable metal similar to the style C plate which, after it is embossed, is inserted into a holder or frame which, in turn, is equipped with an address index card, the full size of the address. The frame is never discarded but used over and over again. This style of plate is more popular than the style C plate because it affords greater filing advantages.

Record Card address plates are the same as the style B plates except that the frame is larger and accommodates a large sized, easily removable index card. It may be printed on both sides for ledger or other forms.

A wide variety of Style B address plates are provided to take care of partial changes of addresses and employees' names, etc. Thus, instead of the usual single piece plate, carrying all of the address, there may be inserted in the frame for Style B plates, one, two, three or more sections, each carrying part of the matter to be printed. For instance: on a payroll list, the employee's number may change. The address plate used on such a list would have the number on one section and the name on another, so the number section could be changed without disturbing the section containing the name.




**Style B Plate, Showing Method of Filing**

Style C plates and the frame for Style B and Record card plates, are perforated at the top to form sockets, for the insertion of as many as twelve metal selecting tabs for indexing or classification purposes, to permit of selection, or skipping of plates, as they are run through the addressing machine.

All address plates can be equipped with removable, vertical filing tabs which are furnished in colors, numbers, alphabet, state and town tabs, etc. These filing tabs, together with the index card, provide a convenient method of keeping lists up to date and locating and removing individual names from the file.

Address plates of different styles are not interchangeable in each addressograph. Addressing units designed to use Style C plates will not take Style B or Record Card plates, etc.

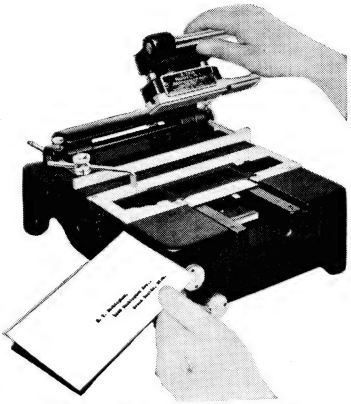
## ADDRESSOGRAPH—continued

### Addressographs

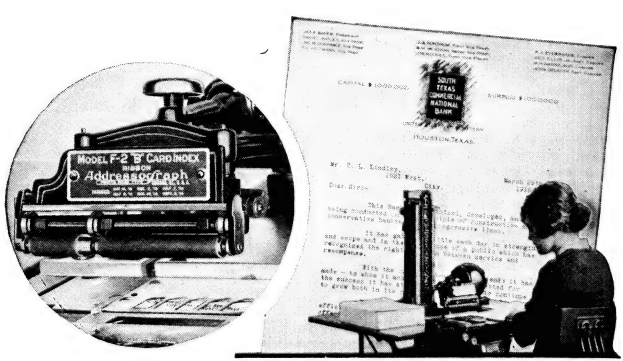
Addressographs are furnished in hand, foot and electrically operated models. Large automatic feed machines are furnished for users with large lists. Automatic feed wrapper addressing machines are made for publishers. Addressographs print through a ribbon or from inked type direct.

**Hand operated models:** Model H-1, operated by placing one address plate at a time at the printing position, is used for imprinting individual addresses successively and for repeat work, such as imprinting dealers' names on booklets, return addresses, tags, labels and other shipping forms. A special tag feed for this model, lists and imprints tags at the rate of 100 per minute.

Models ABC, H-2 and H-3 are equipped with a magazine holding approximately 35 address plates at a time. The plates are advanced to the printing position on Model H-2 by pressing a plate feed lever at the front of the machine. The address plates on models ABC and H-3 are advanced automatically to the printing position by the same stroke of the stamper arm which gives the impression. Model H-3 may also be equipped with duplicating and repeating devices.



**Model H-1, Hand Operated**



## ADDRESSOGRAPH—continued

**Foot and motor operated models** print from ink or through a ribbon. They follow the same principles of the hand operated models, except that an entire drawer of plates is emptied into a vertical feeding magazine at the top and rear of the machine, and as impressions are made, the plates are automatically dropped and filed in their original sequence in a drawer placed in the lower magazine.

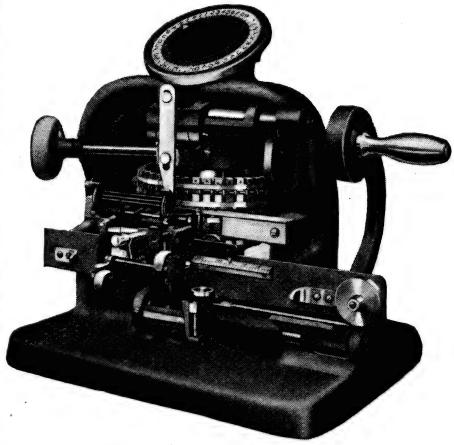
**Automatic feed models** feed envelopes or other forms automatically to the printing point and stack them after being addressed. Plates and forms may be put in while the machine is running. An automatic stop operates if a form fails to feed.

Foot and motor operated models and automatic feed models, may be equipped with the automatic selector attachment previously described.

On hand models, selection is made visually instead of mechanically. Selector tabs are inserted in plates or frames in the same way as if prepared for mechanical selection. As the plates arrive at the printing point, the operator determines, by the position of the selector tabs, whether to imprint or skip the address. As an aid to the operator in quickly discerning the plates to be imprinted, an adjustable indicator is furnished, attached to the machine, to point out the location of tabs set for the desired classification.

### Graphotypes

The Graphotype is an embossing machine. Dies for the embossing of the characters are mounted on the rim of a wheel, turned to position by a hand wheel, controlled by a lateral or dial indicator. When the hand wheel is turned to the desired letter, the operating handle, (on hand operated models, or trigger, on electrically operated models), is pulled, the machine embosses the character and automatically spaces for the next character. Graphotypes may be equipped with any one of 25 different styles of type, including all of the typewriter faces, either all capitals or capitals and small letters.



Hand Operated Graphotype

One of the important uses of the Graphotype is embossing metal identification tags such as those used on machines, cream cans, shrubs, etc. These identification tags can either be embossed or indented on the Graphotype with reversed type, so that the name is readable when embossed.

Speed in embossing depends to a great extent on the operator, and with ordinary three-line name and address should range from 500 address plates per day by an average operator, to 1,000 address plates by an expert operator.

## ADDRESSOGRAPH—continued

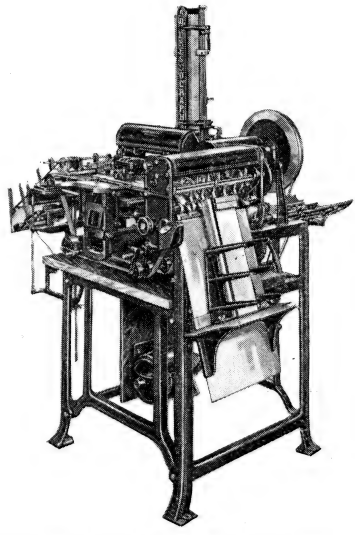
### Models, Descriptions and Prices

### Addressographs:

**(See price list of Attachments for designations of models to which they can be applied).**

When Addressographs are ordered, the style plates to be used, must be specified. Machines designed for one style of plate will not accommodate any other, except that Addressographs taking frames for Style B plates will accommodate any sectional address plate that may be inserted in a Style B frame.

| Model | Description | Price |
|---|---|---|
| H-1, | Hand operated; prints through a ribbon; plates are inserted and removed one at a time. Speed, 1000 to 1500 impressions per hour on repeat work; 800 to 1000 per hour on consecutive addressing | $ 37.50 |
| A B C, | Hand operated; prints through a ribbon; feeds plates to printing position automatically from side magazine; uses special ABC address plates. Speed, 1000 to 1500 impressions per hour | 45.00 |
| H-2, | Hand operated; prints through a ribbon; plates are brought to the printing point from a rear magazine, by operation of a feed lever. Speed, 1000 to 1500 impressions per hour | 57.50 |
| H-3, | Hand operated; advances plates to the printing point automatically; can be equipped with many attachments. Speed 1200 to 1800 impressions per hour | 70.00 |
| F-1, | Foot operated; prints from inked type direct; for addressing circulars and all other work except fill-ins. Speed, 2000 to 2500 impressions per hour | 190.00 |
| F-1, | Motor operated; same as Model F-1 foot operated, except that it is equipped with electric motor. Speed, 2000 to 3000 addresses or 4200 listed impressions an hour | 250.00 |



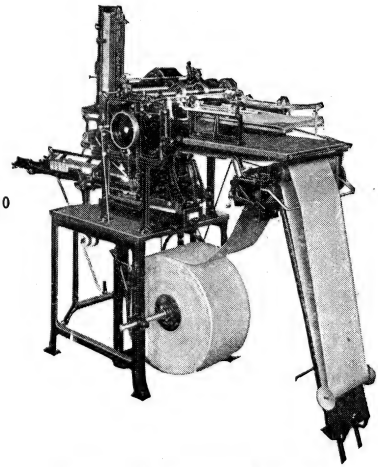
Model A-3 Fully Automatic Addresser

## ADDRESSOGRAPH—continued

F-2, Motor operated; prints through a ribbon; equipped with roller platen for fill-in work and all high class imprinting and addressing work ..... 335.00

A-1, Motor operated; prints from inked type direct; fully automatic; forms and address plates are fed automatically at a speed of 5000 per hour..... 360.00

A-2, Wrapper Addresser; motor operated; prints from inked type direct; fully automatic. Automatically feeds, addresses, cuts and stacks desired size wrappers from a roll, at a speed of 9600 per hour. Attachments print corner card, postal permit, and postal route change, simultaneously with addressing. Separates "expire" into separate drawer while addressing ..... 1500.00



Model A2 Wrapper Addresser

A-3, High speed, fully automatic; prints from inked type direct. Designed for the addressing of large quantities of public utility bills, insurance premium notices, receipts, envelopes, cards, booklets and similar forms. Automatically feeds and addresses at a speed of 7500 per hour. Prints consecutively or can, instantly, be adjusted to repeat two or more impressions from the same address plate. Plates and forms can be put in the machine while running. Automatic stop operates to stop the machine when a form is not fed. Automatic Selector attachment can be used..... 1260.00

## Graphotypes

| Description | | Hand Model Price | | *Electric Model Price |
|---|---|---|---|---|
| Capitals only, also punctuations and small figures | G1-44 | $145.00 | G2-44 | $395.00 |
| Capitals only, also punctuations and both small and large figures for pay forms, or other extra characters, as required.. | G1-56 | 235.00 | G2-56 | 435.00 |
| Capitals and small letters, also punctuations and small figures..... | G1-80 | 260.00 | G2-80 | 460.00 |
| Keyboard Graphotype ..... | | | G3-44 | 850.00 |

Graphotypes may also be rented at charges of from $5.00 to $10.00 (according to model) for two weeks or less, and at an additional charge of from $2.00 to $4.50 per week in excess of two weeks.

* Standard motors are 110 or 220-Volt AC or DC.

## ADDRESSOGRAPH—continued

### Attachments:

**Note:** Attachments are standard equipment only on models noted.

| Name | Description | | Standard Equipment on | Optional Equipment on | Price |
|---|---|---|---|---|---|
| **Counter:** | Counts total impressions printed; does not count skips; resets to zero, | | None | All but ABC | $ 10.00 |
| **Cut-off:** | Prevents printing of parts of address, salutation or other embossed matter, not desired on certain forms, | | None | All models | .46<br>t<br>5 |
| **Dater:** | Prints date or special memoranda to right or left of or above address at same time address is printed, | Prints right | H-1, H-2<br>H-3, F-2 | F-1<br>A-3 | 5.00<br>25.00 |
| | | Prints above | None | H-2, H-3<br>F-1<br>F-2 | 5.00<br>10.00<br>1.50 |
| **Ejector:** | Automatically ejects envelopes or other forms after addressing, | | None | H-2, H-3 | 10.00 |
| **Gauge:** | End or side; for accurately locating impressions on forms, | | All Models | Special gauges furnished to order | |
| **Lister:** | Automatically feeds wide sheets, strips, etc. A special design for publishers prints on and rewinds mailer strip for Dick, Cobb or Horton mailing machine, | Cards | None | F-1, F-2 | 25.00 |
| | | Sheets | None | H-2, H-3, F-1, F-2 | 25.00 |
| | | Checks | None | F-1, F-2 | 35.00 |
| | | Tags | None | H-1 | 15.00 |
| | | Mailer | None | F-1, F-2 | 75.00 |
| **Multiple Platen:** | The medium by which cut-off is accomplished on hand operated models, | | None | H-1, H-2, H-3 | 5.00 |
| **Number Printer:** | Prints consecutive numbers adjacent to address. | | None | H-1, H-2, H-3<br>F-1, F-2<br>A-3 | 100.00<br>60.00<br>70.00 |
| **Selector:** | Governed by adjustable tabs on top of address plate causes plates to print or skip as desired, | | None | F-1, F-2<br>A-3 | 60.00<br>175.00 |

## ADDRESSOGRAPH—continued

| Name | Description | Standard Equipment on | Optional Equipment on | Price |
|---|---|---|---|---|
| **Signal:** | Adjustable tabs signal operator of some addressing requirement, | None | F-1, F-2 | 20.00 |
| **Skipper:** | A lever, operated by knee to skip plates without printing, | H-2 | F-1, F-2 | 15.00 |
| **Spacer:** | Leaves one or more blank lines on sheet so data can be filled in later, | None | H-2, H-3<br>F-1, F-2 | 2.50<br>5.00 |
| **Stand:** | Tubular; for hand models, | | H-1, H-2, H-3 | 15.00 |

### Address Plates:

| Style | Blanks | Empty Frames — With Shifting Tabs | Empty Frames — With Switch Tabs | Empty Frames — No Tabs |
|---|---|---|---|---|
| B, per M..... | $ 2.90 | $21.50 | $26.50 | ..... |
| C, per M..... | 10.00 | ..... | ..... | ..... |
| ABC, per M..... | 10.00 | ..... | ..... | ..... |
| Record, per M..... | 2.90 | ..... | 28.50 | $23.50 |

### Cabinets:

| Style and Number of Drawers | Drawer Arrangement | Construction | Capacity — B Plates | Capacity — C Plates | *Price |
|---|---|---|---|---|---|
| SBC-6 | 3 wide 2 deep | Steel | 1050 | 1380 | $ 12.00 |
| SBC-12 | 3 wide 4 deep | Steel | 2100 | 2760 | 22.00 |
| SBC-18 | 3 wide 6 deep | Steel | 3150 | 4140 | 28.00 |
| SBC-30 | 3 wide 10 deep | Steel | 5250 | 6900 | 34.00 |
| SBC-133 | 7 wide 19 deep | Steel | 23275 | | 200.00 |
| SC-161 | 7 wide 23 deep | Steel | | 37030 | 230.00 |
| MBC-8 | 2x4 | Wood | 1400 | 1840 | 20.00 |
| B-126 | 7x18 | Wood | 22050 | | 75.00 |
| C-147 | 7x21 | Wood | 33810 | | 95.00 |
| SRC-21 | 3x7 | Steel | 3175 | Record plates | 31.00 |

* Price does not include drawers. Add for drawers:

For B or C Style Plates, each..... $0.95

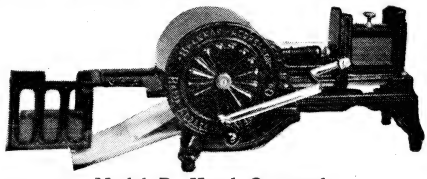
For Record Style Plates, each..... 1.15

## ADDRESS PRESS

Another name for the Elliott Addressing Machine. For complete description, see Elliott Addressing Machine.

## BELKNAP-RAPID

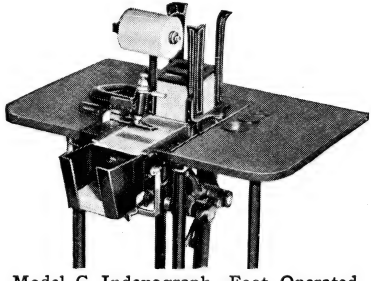
Made by the Rapid Addressing Machine Company, 32 West 23rd Street, New York City. Sold through specially appointed dealers and agents.



Model B, Hand Operated



Model D, Motor Driven



Model G Indexograph, Foot Operated

**Stencil type machines** made in various models for addressing envelopes and other commercial forms, including automatic and semi-automatic machines for publication addressing.

Addresses are typed on stencils mounted in heavy paper frames. A special attachment is required to hold the stencils while addresses are being cut.

All models feed the stencils to the printing point automatically, from a vertical magazine in the rear and eject them in the same sequence, to a second magazine at the front of the machine.

**Inking is automatic.** The ink is contained in a reservoir and fed by capillary attraction by a wick, to a felt distributing roller, which distributes the correct amount to a rubber feed roller. The ink roller operates from below the stencil. The form to be addressed is placed face down over the stencil, which has been fed automatically into position. The pressure exerted by the contact of a printing head descending and the ink roller passing over the bottom of the stencil, makes the imprint, affording clear impressions and uniform inking with a minimum of wear on the stencils.

## BELKNAP-RAPID—continued

All models except the hand Model B are equipped with three foot-lever operating controls: The imprinting pedal operates to make the imprint and automatically move the next stencil into position; the repeat pedal holds the stencil at the printing point to repeat the same address as often as desired; the skip pedal releases a stencil without printing.

**The selector device** has recently been developed. By means of holes punched in definite positions in the stencil frames, and a series of metal fingers, addresses by any or several classifications may be imprinted and all others skipped. As the stencils are passed through the runway, the metal fingers, in each selector position, drop through to make an electrical contact whenever the frame has a perforation in that position, thus, stopping that stencil for imprinting; otherwise, stencils will pass through.

**Visual selection** is a greatly emphasized feature, particularly when the Indexograph type of stencils are used. When the stencil is in printing position and the section of the frame (that part of the card on which the record is printed), is directly in front of the machine, the operator, according to the standing of the account of the customer, or other information appearing on the record card, imprints, skips or repeats the address. A series of adjustable fingers may be attached to point out uniformly, the location of data on each record card governing the classification desired.

### Stencils

In the manufacture of the stencils, two thicknesses of fibrous paper are used and treated by the coagulating process. There are two types of frames.

**Indexographs** are the larger type of stencil frames. They have a panel for the stencil and above or below it, (as required by the user), a space approximately 1¾ inches high and the width of the stencil, is provided for a ledger index or other form, imprinted directly on the frame. The overall size of the Indexograph stencil frame is approximately 4⅛ inches wide by 4 inches high. A Systems Service Department, to lay out, imprint and install individualized forms on Indexograph stencil frames, is maintained by the manufacturers for their patrons.

**Fibrotype** stencils are the smaller size of stencil frames. They contain the address panel only.

### Addressing Units

| | Model | Price |
|---|---|---|
| **Hand Tag Addresser,** a frame in which a Fibrotype stencil is inserted by hand, equipped with a device to hold a roll of labels or tags, which are fed and removed by hand. Impressions are made by a rubber hand roller impressed over the stencil..... | A-1 | $17.50 |
| **Hand Addresser,** rotary type. For small lists; hand inked. Uses Fibrotype stencils, has automatic stencil feed; speed 1200 to 1800 impressions per hour..... | B-1 | 67.50 |

## BELKNAP-RAPID—continued

| | Indexograph Model | Indexograph Stencil Price | Fibrotype Model | Fibrotype Stencil Price |
|---|---|---|---|---|
| **Hand Addresser.** Mounted on stand. Operated by a lever having a reciprocating movement, and to which the stamping head is attached. Automatically inked. Speed 2000 to 4000 addresses per hour | G-9 | $140.00 | D-9 | $140.00 |
| **Foot Addresser.** Same as above, except operated by a foot lever | G-9 | 150.00 | D-9 | 150.00 |
| **Motor Addresser,** same as above except operated by an electric motor and can be equipped with payroll and listing attachment; also duplicating, triplicating and repeating mechanism | G-1 | 395.00 | D-1 | 325.00 |
| **Motor Imprinter only,** without automatic stencil feed | G-7 | 275.00 | G-7 | 275.00 |
| **Motor Addresser,** rotary type, for publishers. May be equipped with mailer strip attachment, automatic envelope feed and stacker, or wrapper cutter. Speed 8000 to 10,000 addresses per hour. (See list of attachments for prices and descriptions.) Price without attachments | | | K-7 | 685.00 |
| **Motor Duplex Addresser.** Will address and list names on mailer strip (for Horton, Dick or Cobb mailer); print and cut proof of addresses in strips of uniform length for binding; automatically pick out and file, separately, expiring stencils, and count number of impressions. Speed, 7500 per hour. Price, with classification perforator and accessories | | | E-1 | 370.00 |

### Attachments

| Name and Description | Optional Equipment on | Price |
|---|---|---|
| **Stand** (adjustable) | B-1 | $ 17.50 |
| **Counter** | D-9 | 10.00 |
| **Counter** | D-1, G-1 | 20.00 |
| **Counter** | K-7 | 25.00 |
| **Lister** | D-1, G-1 | 51.00 |
| **Payroll** | D-1, G-1 | 43.00 |
| **Duplicator and Triplicator** | D-1, D-1 | 35.00 |
| **Automatic envelope feeder and stacker.** Automatically feeds, addreses and stacks regular commercial size envelopes, with flap on top at speed of 8000 to 10,000 per hour | K-7 | 165.00 |
| **Mailing strip lister.** Prints names and addresses on continuous web of paper 1¼ to 4½ inches wide for Cobb, Horton or Dick Mailer, at speed of 14,000 per hour | K-7 | 137.00 |

## BELKNAP-RAPID—continued

| Name and Description | Optional Equipment on | | Price |
|---|---|---|---|
| **Wrapper Cutter.** Cuts and automatically feeds wrappers of any desired length, from a continuous roll, at speed of 8000 to 10,000 per hour..... | K-7 | (No. 1, 8″ to 15″)<br>(No. 2, 10″ to 18″)<br>(No. 3, 12″ to 24″) | 161.00<br>190.00<br>216.00 |
| **Return Card Printing attachment:** Prints a return corner card on wrapper at the same time that wrapper is cut and addressed..... | K-7 | | 62.00 |
| **Postal Permit Printing attachment.** Similar to return card printing attachment; prints postal permit number on wrappers at the same time they are cut and addressed..... | K-7 | | 54.00 |
| **Classification Perforator,** motor driven.. | Model 2, | Style C | 475.00 |

### Stencils

No. 1, Fibrotype (address panel only).....Per M $15.00
No. 9, Fibrotype (address panel only) with linen tabs.....Per M 25.50
No. 32, Indexograph, (record card and stencil).....Per M 20.00

| Cabinets Construction | Drawers | Total Stencil Capacity | Kind of Stencils | Price Without Drawers | Price Complete |
|---|---|---|---|---|---|
| Metal | 30 | 10,500 | No. 1 or 9 | $41.25 | $ 69.75 |
| Metal | 15 | 5,250 | No. 1 or 9 | 31.25 | 45.50 |
| Metal | 15 | 5,000 | No. 32 | 42.50 | 56.75 |
| Metal | 35 | 15,000 | No. 32 | | 150.00 |

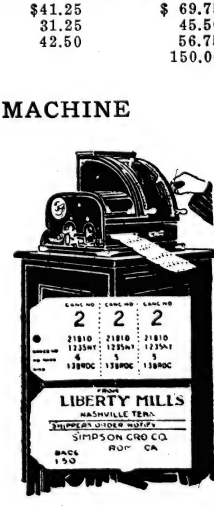
## BUFFALO TAG ADDRESSING MACHINE

Made by the Addressing Machine Company, 895 Niagara Street, Buffalo, New York. Sold through their own specially appointed representatives.

A distinctive machine designed and built especially for the rapid addressing of quantities of all makes of No. 5 size shipping tags, cards or pasters. It will accommodate a two-line address, each line of twenty-four characters, or four lines may be addressed by running tags through a second time.

Addresses are printed in weatherproof ink from set-up made on metal type wheels arranged in two sets (one set for each line).

The type wheels are turned to the character desired by two set-up levers (one for the upper line and one for lower line of address), operating in vertical slots provided with indexes. A secondary lever locks the type wheel in position after it is positioned. The setting of a counting device at the predetermined number of tags desired, operates to lock the machine automatically when that number of tags have been addressed.



## BUFFALO TAG ADDRESSING MACHINE—continued

The tags in continuous strips or gangs are stored in a standing height cabinet base below the machine and fed as required, through the back and out the front of the machine.

The shipper's name or advertisement may be imprinted, if desired, simultaneously with the name and address of consignee, from an interchangeable electro fitted on a special electrotype roll. This type machine is used largely by concerns shipping under two or three business cards or when it is desired to imprint an analysis or other special information on a shipping tag.

The speed of setting up a name is rapid; the operating speed is approximately one hundred tags per minute. When a run is completed, the entire set-up is eliminated at one time by a release lever.

### Models and Prices

Standard two-line model ..... $300.00
Interchangeable electro model (for four-line, double run address) .... 325.00

(Tags for use in this machine are standard with all tag makers)

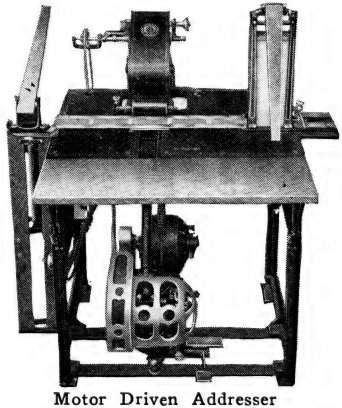
## ELLIOTT

Made by the Elliott Addressing Machine Company, Cambridge, Massachusetts. Sold through specially appointed dealers and their own sales force located in principal cities throughout the country.

The mechanical principles of Elliott machines embody a soft rubber, inked roller, which is pressed down on, and flattened against, but does not rotate over, the stencil as it is fed over the matter to be addressed at the printing point.

This soft impression roller receives its supply of ink by rotating against the wide rim of a wheel or drum, which acts as a distributing roller to carry the ink supply. The machine prints from tissue stencils cut in a typewriter or by a stencil cutting machine equipped with Gothic type.

Two sizes of frames are made. The regular size measures 4½"x2" and contains the panel for the stencil only; supplied in many colors for classification purposes. A larger style called the "Jumbo" size, measures 4" by 4⅛" and provides a ruled form for ledger or index memoranda. Addressing machines will take either, but not both, sizes of stencil frames. Any model will be furnished for either size.

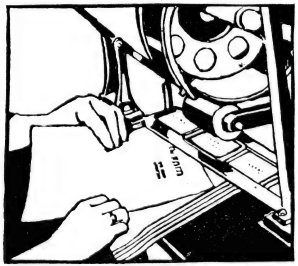


Motor Driven Addresser

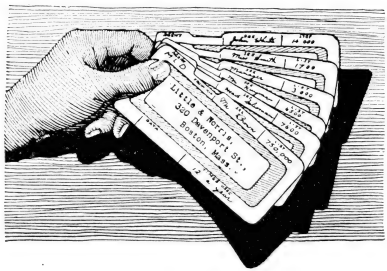
Special machines may also be supplied to use ordinary 3x5 index cards.

The form to be addressed is inserted face up in a guide at the printing point and affords visibility immediately before and after the impression

## ELLIOTT—continued

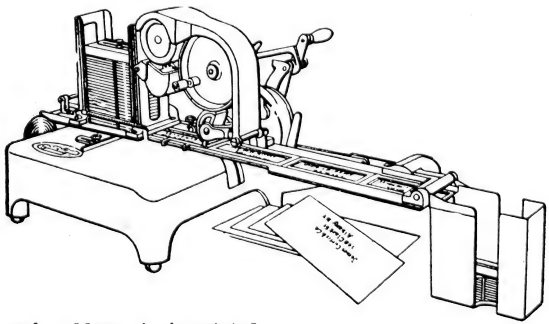


The Printing Point and Method of Feeding



Stencil Cards

has been made. The direction of the stencils through the machine may be reversed so as to allow the backing up and the repeating of an address that has been inadvertently passed through. Stencils in filing trays holding 250 stencils each, are placed in an upper magazine and are automatically propelled one by one through a slideway to the printing position. After the impression has been made, they move on and are deposited in the same sequence in a receiving tray. The operation is quiet.



The flattening of the soft rubber roll when making an impression, allows printing on uneven surfaces of varying thickness, without adjustment, and also permits of the insertion of a pile of several forms at a time and removing the top one as each address is imprinted.

A selecting device controlled by perforations or notches made in each stencil frame provides for the automatic selection (skipping and printing) of addresses by classifications.

On hand operated models, selection is made visually instead of mechanically. Notches or perforations are made in the stencil frames in the same way as if prepared for mechanical selection.

Indicating fingers, mounted on the runway in which frames pass to the printing point, may be adjusted to point to the position of the perforation or notch, denoting the desired classification, so that the operator may

## ELLIOTT—continued

quickly discern whether to imprint or skip plates as they arrive at the printing point.

### Attachments

**Sheet Listing attachment** for listing names, numbers, etc., one line at a time, on large sheets or any kind of loose leaf forms. Extra ..... $50.00

**The Multiplicator,** prints the same address two, three, or any other number of times up to six. May be attached to foot or motor operated machines. Price, for any one adjustment either duplicating, triplicating, quadruplicating, etc..... 20.00
For any additional adjustment, such as duplicating and triplicating, add for each adjustment..... 5.00

**Repeating and Skipping attachment** prints the same address as many times as desired, or skips addresses not wanted.
Hand controlled type is standard equipment on all models.
Foot controlled type, (for any except hand models), for either repeat or skip (not both)..... 20.00
For both repeat and skip..... 40.00

**Dick Mailer Strip lister** for printing addresses on continuous paster roll for use of newspapers, magazine publishers, etc. Extra....100.00

**Automatic selector attachment,** selects from general mailing list only those addresses wanted at a certain time, by vocation, season, sex, location, rating, etc. Holes are made or notches are cut by a punch and gauge in the stencil frames. The number of classifications is extensive. A single address card can be notched or punched to serve under any number of different classifications and combinations. Selector pins, adjustable for the classification desired, automatically cause the printing of addresses wanted and allow all other stencils to pass through without printing. Extra. 65.00

**Line Cover attachment** allows any line of the stencil to be non-printed when desired. Extra..... 5.00

**Numbering and Dating attachment,** dates and consecutively numbers delivery slips and similar forms at the same time they are addressed. When attached to foot and motor models, extra..... 25.00
Dating attachment for hand models, prints the date at the top and to the right of the address. Extra..... 10.00

**Counter attachment** for counting number of impressions.
Set-back type ..... 10.00
Non-set back type..... 7.50

**Transcript attachment,** prints addresses on a continuous strip of roll paper.
On hand operated models, extra..... $10.00
On foot or motor operated models, extra..... 15.00

### Addressing Units

**Rotary, Hand Crank Operated Addresser.** A new, improved model was placed on the market in January, 1924. It is operated by a hand crank. The means by which impressions are made differs somewhat from the above general description. Instead of the usual flattening action of a soft rubber roller, as above described, the ink is carried to the stencil and pressure applied by a rotating segment. The hopper holds 100 standard size stencils, which are fed automatically to and from the printing point.

## ELLIOTT—continued

Adjustments, provided as standard features on this model, allow of controlling the stencil feed manually to repeat the same address indefinitely or to duplicate any address. A skipping device may be attached to provide for the passage of any stencil without imprinting.
Other attachments that may be added to this model are: the transcript attachment for imprinting addresses on a continuous strip of paper; the date printing attachment, for imprinting the date above or below each address at the same time the address is imprinted; automatic counter, to count only addresses printed, but not those skipped. Speed, 1500 addresses per hour..... 75.00

**Tag addressing machine.** Operates on the same principle as the hand operated rotary addresser, except that stencil cards are not automatically fed. Stencils are inserted manually and left in the machine until as many impressions of the same address as are desired have been imprinted. May also be used to address envelopes ..... 30.00

**Foot lever operated addresser.** Operated by foot lever; hopper holds 250 standard size stencils. May be equipped with hand or automatic stencil feed..... 150.00

**Motor driven addresser.** Operated by a 1/6 H. P. D. C. motor, controlled by a foot lever. Uses standard size stencils, accommodating 250 in the supply hopper at one time; equipped with hand skipper attachment, and may be equipped with any or all other attachments. Speed 3,000 impressions per hour..... 300.00

This is the model usually sold for the larger size stencils, but any other model will be furnished, on special order, to accommodate "Jumbo" frames.

**Special 4x4 stencil addresser.** Same as the above machine, except it will accommodate the "Jumbo" size stencil frames..... 325.00

**Automatic feed addresser.** Completely automatic; feeds envelopes as well as stencils to and from the printing point..... 500.00

**Automatic wrapper addresser.** For use by publishers. Prints individual addresses on wrappers from a continuous roll of paper, together with postal permit return address, and cuts wrappers into any desired length. Motor operated..... 1000.00

**Automatic Public Service bill addresser,** for handling duplicate and triplicate forms, etc. Used by gas, light, power, water, telephone and other public utility companies. Motor operated.... 1200.00

**Stencil cutting snap-on attachment** for any typewriter platen..... 1.00

**Moistener for stencils;** small size ..... 6.00
Large size, automatic..... 35.00

## Stencil Cutting Machines

For addressing that does not require an imitation typwritten address, a special stencil called a Gothic type address card, is furnished. These cards are of jute fibre through the center as well as frame. They print a bold Gothic address of the same size and furnished in the same colors as regular typewriter type address cards. The following cutters are sold for use with these cards. The manufacturers also provide a cutting service for their patrons.

**Hand Cutter:** 44 characters, speed 40 addresses per hour. Characters are selected by means of a hand wheel and dial and the cutting power applied by a hand lever. With small size type..$ 125.00
With large size type. 135.00

## ELLIOTT—continued

**Foot Cutter,** similar to the hand cutter above described; except that the cutting power is applied by foot lever..... 250.00

**Electric Cutter,** same design as the foot operated cutter, except that the cutting power is derived from an electric motor; speed 85 addresses per hour. Price..... 500.00

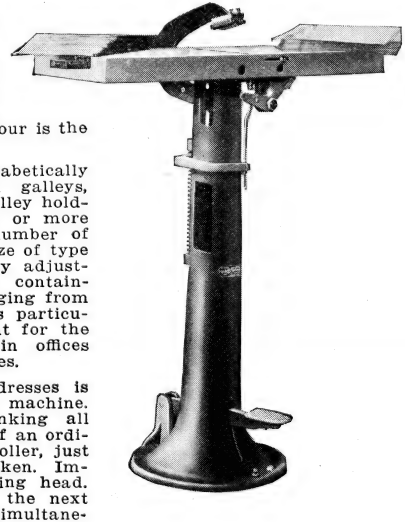
**Electric Keyboard Cutter,** is equipped with four-row keyboard and is motor driven; speed 100 addresses per hour. Price..... 1000.00

## Filing Equipment and Stencils

| | Price per M. |
|---|---|
| Typewriter stencils, including frames, standard size (2x4½")..... | $15.00 |
| Gothic address cards 2x4½" blank..... | 9.00 |
| Jumbo size typewriter blank address cards..... | 18.00 |
| 27—Drawer steel cabinet, holds 6750 address cards..... | 35.00 |
| 9—Drawer steel cabinet, holds 2250 address cards..... | 24.00 |
| 25—Drawer oak cabinet, holds 6250 address cards..... | 28.00 |
| 6—Drawer oak cabinet, holds 1500 address cards..... | 8.00 |

## MERCANTILE

Made by the Challenge Machinery Company, Grand Haven, Michigan. Sold through specially appointed dealers.



Particularly adapted to newspaper, periodical and envelope addressing. Prints from type or linotype slugs directly on the newspaper margin, wrapper, envelope, etc., at a speed limited only by the skill of the operator. Being operated by treadle, both hands are free for feeding. 2,000 to 3,000 an hour is the average output.

Addresses are arranged alphabetically in specially constructed steel galleys, thirty inches in length, each galley holding from fifty to one hundred or more addresses, depending on the number of lines to each address and the size of type used. The machine is instantly adjustable to accommodate galleys containing addresses of any width, ranging from ten to sixteen ems pica. It is particularly economical and convenient for the handling of a mailing list in offices equipped with linotype machines.

To operate, a galley of addresses is placed in the magazine of the machine. Inking is accomplished by inking all slugs in each galley by means of an ordinary printer's brayer or hand roller, just before impressions are to be taken. Impressions are made by a printing head. As each address is imprinted, the next address is automatically and simultane-

## MERCANTILE—continued

ously brought into place under the printing head. The travel of the slugs making up the address is accomplished by means of a steel hook, which catches back of the last line of the address and pulls each address forward successively to a position under the opening in the table below the printing head. Low metal slugs are used for spacing between the addresses in the galley. A bell automatically rings when the last address has been fed and at the end of each postoffice list.

### Models, Descriptions and Prices

| Model | Description | Price | Model | Description | Price |
|---|---|---|---|---|---|
| No. 1. | For 10 em names.... | $100.00 | No. 3. | For 16 em names... | $100.00 |
| No. 2 | For 14 em names.... | 100.00 | No. 13. | For 13 em names... | 100.00 |

Galleys for holding address slugs (prices vary according to the quantity ordered), average, each ..... .95

Cabinets holding from 21 to 324 galleys range from.....$35.00 to $142.00

**(All prices F.O.B. Grand Haven, Michigan.)**

## FEDERAL

Made by the Federal Addressing Machine Corporation. Formerly the Smart Addressing Machine Company. Factory and executive offices, Main at Goodell Streets, Buffalo, New York. Sold direct and through specially appointed dealers.

A stencil type of addressing machine of simple design, operating on the principle of a diaphragm stencil duplicator.

The stencils are fed from a hopper, across the printing point, and the ink applied by a rubber roller mounted in a carriage. As each address is imprinted, the next stencil moves automatically into place.

The address cut into the stencil is always visible; the form to be addressed is inserted face up under the stencil. Skipping, duplicating and repeat features are regular equipment.

The stencil is of two-piece construction. The tissue comprising the stencil is mounted on a piece of flexible manila paper and requires no special attachment for cutting on a typewriter. When the address has been cut the stencil panel is slipped between the plys of a paper frame. Frames are furnished in any of six colors and white, for use in classifying, etc.

A feature is that, by means of an attachment costing $10.00, any model may be converted into a duplicating machine, taking postcard size stencils, from which the entire body of a postcard or other form of not greater size may be imprinted.

### Models and Prices

Standard addressing machine, hand operated, as above described; speed 1,000 addresses per hour.....$57.50

Tag addressing machine, for addressing quantities of tags each with the same address; speed 500 to 1,000 per hour..... 35.00

Postcard attachment for either envelope or tag addressing machine, extra ..... 10.00

Stencil frames, assorted colors, per M..... 8.00

Stencil panels, per M..... 7.00

Tag stencils, large size, per M..... 8.00

Postcard stencils, per dozen..... 1.00

Metal cabinet, 4 drawers....$10.40 20 drawers..... 27.00

## THE MULTI-MAILER SYSTEM

Made by the Speedaumatic Company, 817 West Washington Boulevard, Chicago, Illinois. Sold by their own salesmen.

The Multi-Mailer System, originally designed as mailing equipment for newspapers and magazines, now also includes models for commercial envelope and card addressing.

The system comprises:

(1) The Speedaumat is the name given the light weight zinc plate on which the address is embossed;




The Speedaumat, (reduced size)

(2) The Speedembosser, a machine for embossing addresses on the plates;

(3) The Speedaudresser, the machine for imprinting the addresses from the embossed plates through inked ribbons;

(4) The Speedaumailer, for addressing and wrapping newspapers and magazines.

**The Speedaumats** are zinc plates, forming the basis of the system. They are malleable, permitting of changes in address and expiration dates, corrections, etc., being embossed directly over the old embossing on the original Speedaumat. A high degree of legibility makes them easy to read and file or withdraw from the sheet steel trays, called Galleys, in which they are filed. The galleys are of a special design to facilitate their use with the addressing and mailing units.

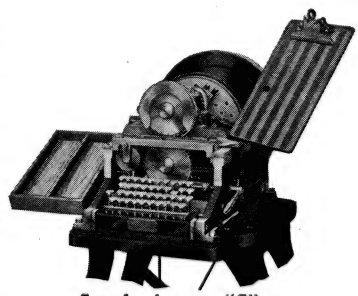
Price—in lots 1,000 to 50,000.....$6.00 per M.
Price—in lots 50,000 to 100,000..... 5.50 per M.
Price—in lots 100,000 to 500,000..... 5.00 per M.
Price—in lots 500,000 or more..... 4.75 per. M.

### Embossing Equipment

**Speedembosser "A"** is a hand operated embossing unit, about the size of a standard typewriter. It is operated by locating the letter or character to be embossed on the character scale and pulling a handle for the impression. The average net output by the purchaser's operator is 35 to 40 three and four line addresses an hour. Price....$275.00

**Speedembosser "B"** is motor driven, operated with hand locating lever, which when moved to the letter or character desired on the character scale, and pressed down, automatically makes the impression. The average net output by the purchaser's operator is 55 to 60 three and four line addresses per hour.

Price .....$435.00



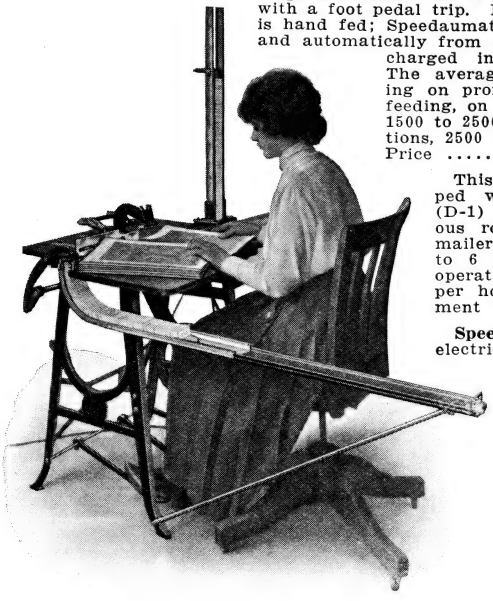
Speedembosser "C"

## THE MULTI-MAILER SYSTEM—continued

**Speedembosser "C"** is also motor driven, equipped with Universal typewriter keyboard and is designed for big production. With it the average net output by the purchaser's operator is 85 three and four line addresses per hour. Price.....$1,300.00

## Addressing Equipment

**Speedaudresser "A"** is a hand operated machine, designed for envelope and card addressing in limited quantities. Speedaumats are inserted singly. Matter to be printed is inserted by hand. Price.....$55.00



Speedaudresser "D"

**Speedaudresser "D"** is motor driven, equipped with a foot pedal trip. Matter to be addressed is hand fed; Speedaumats are fed continuously and automatically from a hopper and are discharged in the same sequence. The average production, depending on proficiency of operator in feeding, on envelopes and cards is 1500 to 2500 per hour, on publications, 2500 to 3500 an hour. Price .....$500.00

This model may be equipped with an attachment (D-1) to imprint a continuous roll of strip for hand mailers or office record up to 6 inches wide. It then operates at a speed of 7500 per hour. Price of Attachment D-1 .....$50.00

**Speedaudresser "E"** is an electrically driven, high speed, automatic envelope and card addressing machine designed for big production. Speedaumats and pieces to be addressed are fed continuously and automatically into the machine at a speed ranging from 8000 to 12,000 impressions per hour, depending on the size of the article being addressed. Price .....$875.00

**Speedaudresser "G".** A motor driven high speed machine. Imprints a continuous roll of strip up to 3" wide for hand mailers, or for record purposes, at a speed of 12,000 an hour, and addresses envelopes and cards at a speed of 8500 an hour. Speedaumats are continuously and automatically fed from a hopper. Price.....$1100.00

Can be equipped with Attachment G-1, Automatic card and envelope stop to operate when card or envelope fails to feed, at an additional price of .....$75.00

## THE MULTI-MAILER SYSTEM—continued

**Speedaudresser "H"** is a motor driven wrapper addresser, designed for publication work. It takes the paper from a roll, imprints an address, and post office permit and return address if desired, cuts the wrapper the desired length, marks for town or any other separation required, at an average speed of 6000 per hour. Wrappers any size up to 18x18 can be handled on it. Flexible as to the position of the imprint on the wrapper. Price .....$1250.00

A continuous strip for hand mailer or record purposes, may be addressed at the same time the wrappers are being addressed, by an attachment (H-1), or independently at a speed of 10,000 an hour; at an additional price of .....$60.00

Or (with H-2) office check sheets 20 inches long may be addressed and cut at the same time the continuous strip is addressed or independently. Price .....$15.00

## Publication Mailing Equipment

**The Speedaumailer** is made in several different types, for newspaper and magazine addressing and wrapping. It is either in the club only type of machine, which addresses the publication and delivers flat, for club bundling; or in the combination machine which addresses, folds, wraps and seals single wraps. Made with two types of feed; needle feed for newspaper work only; gripper feed for use on larger sizes of magazines. Takes newspapers 8 to 64 pages, magazines, 12 to 128 pages.

When running newspaper clubs the Speedaumailer addresses at a speed of 12,000 an hour; when addressing, folding and wrapping newspaper single wraps, it operates at a mechanical speed of 10,000 an hour. On magazines the speed varies with the size and type of the magazine being run, but averages somewhere between 7000 and 9000 an hour.

**Speedaumailer A** is a combination mailer which receives newspapers in the half fold, addresses directly on the paper in the white margin, separates into towns and routes, and delivers in the half fold, flat without wrapping, to a club bundler at a mechanical speed of 12,000 an hour. On addresses, folds to eighth fold, single wraps, seals, separates into routes, and delivers into sacks at a mechanical speed of 10,000 an hour. Price .....$9,875.00

Also can be equipped to deliver papers in quarter fold at an additional price of .....$400.00

**Speedaumailer B** is a club mailer which receives newspapers in the half fold, addresses directly in the white margin, separates into towns and routes, and delivers in the half fold, flat without wrapping to bundlers at a mechanical speed of 12,000 an hour. Price.....$5,600.00

**Speedaumailer C** is a combination mailer which receives newspapers in the half fold, addresses directly in the white margin, folds to eighth fold, single wraps, seals, separates into routes and delivers into mail sacks at a mechanical speed of 10,000 an hour; or addresses, separates into towns and routes, and delivers in the half fold flat, without wrapping to club bundlers at a mechanical speed of 12,000 an hour. Also takes magazines, addresses, folds to two fold (four-ply) single wraps, seals, separates into routes and delivers into mail sacks; or addresses, separates into towns and routes and delivers flat to club bundlers at a mechanical speed of 7,000 to 9,000 an hour, dependent on size and thickness of magazine. Price .....$10,825.00

Can also be equipped to deliver newspapers in quarter fold at an additional price of.....$400.00

**Speedaumailer D** is a club mailer which receives newspapers in the half fold, addresses directly in the white margin, separates into towns and routes and delivers in the half fold, flat without wrapping to club bundlers at a mechanical speed of 10,000 an hour. Also takes magazines, addresses, separates into towns and routes and delivers flat to club

## THE MULTI-MAILER SYSTEM—continued

bundlers, at a mechanical speed of 7,000 to 9,000 an hour, dependent on size and thickness of magazine. Price.....$6,550.00

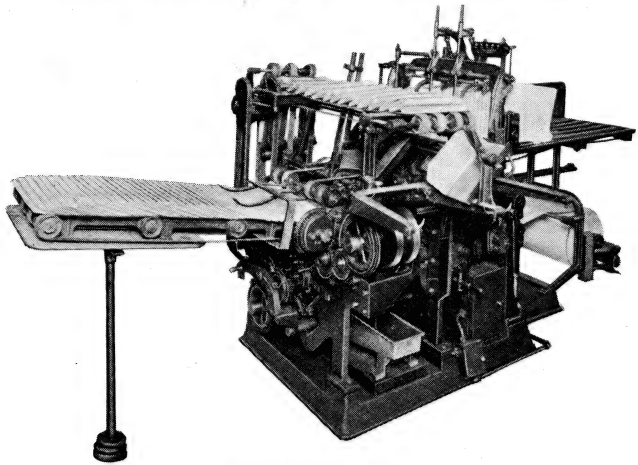
**Speedaumailer E** is a club mailer for magazines—addresses, separates into towns and routes and delivers flat without wrapping to club bundlers, at a mechanical speed of 7,000 to 9,000 an hour, dependent on size and thickness of magazine. Price.....$6,900.00

**Vacuum Plant,** which must be used with all Speedaumailers:

For one Speedaumailer installation.....$260.00

For two to four Speedaumailer installations..... 320.00

**All prices F. O. B. Chicago, payable in U. S. Exchange**



Speedaumailer "A"

## POLLARD-ALLING

Made by the Pollard-Alling Manufacturing Company, 222 West 19th Street, New York City.

A system and machinery specially designed for the addressing of newspapers, magazines, periodicals, etc.

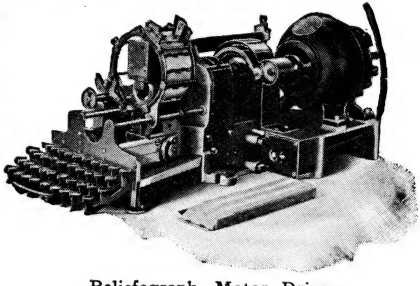
The construction provides for exceptionally high speed. Addresses are embossed on small aluminum plates measuring approximately 2½ inches wide by ¾-inch high, designed so that they may be hinged together forming one continuous flexible strip, similar to a flat link chain. The hinged plates are stored on reels, 18 inches in diameter, each reel holding about 2500 plates, the plates and reel weighing about ten pounds. By the design of the hinge member, individual plates are easily removed for kills and expires, and additions quickly placed in proper positions to suit any mailing schedule. All printing operations are done over a rotary drum over which the linked address plates are carried. Impressions are made through an inked ribbon.

The equipment consists of an embossing unit called the "Reliefograph" and a printing unit called the "Addresser."

## POLLARD-ALLING—continued

### Embossing Equipment

**Reliefograph Model "C"** is used for embossing names on thin aluminum plates, equipped with small type for subscribers' lists and large type for newsdealers' lists. It is about the same size as a typewriter; noiseless in operation, portable, designed for nominal production with a capacity of 50 plates per hour. A twirler knob positions the dies for the character wanted and the impression is made by a hand lever.



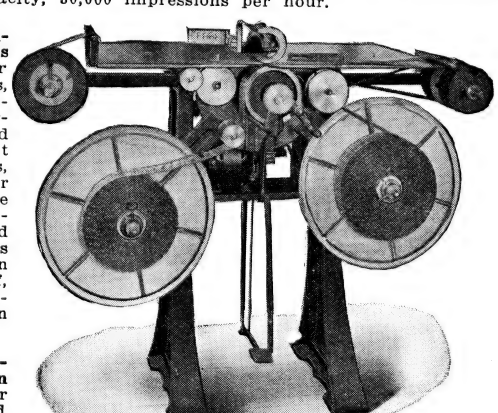
Reliefograph, Motor Driven

**Reliefograph, Motor Driven,** has a typewriter keyboard, is equipped with a motor, and is designed for quantity production. Capacity 250 name plates per hour.

### Printing Equipment

**Mailer Strip and Proof Printer, Style G** is electrically operated and equipped with a counter. Prints addresses ready for use in Dick or Horton mailer in rolls of about 3000 names each on paper of suitable width. It also prints proof, which can be made up in book form for convenient office reference. Capacity, 30,000 impressions per hour.

**Motor Driven Addresser, Style H** prints addresses for mailer strip on paper rolls, office proof for reference, directly on margin of newspapers and publications or on cut wrappers, envelopes, bills, statements or any other form to be addressed. It is equipped with counter and motor. Capacity is 10,000 addresses on mailer strip or proof, per hour, or 3000 addresses per hour on anything hand fed.



**Automatic Newspaper and Publication Addresser** is motor driven and equipped with counter. Newspapers and publications are fed automatically from a supply hopper. Prints addresses on

## POLLARD-ALLING—continued

margin direct and makes distinguishing mark for separation of post offices. Addresses appear on top in plain view as they come from machine. Capacity 12,000 addresses per hour.

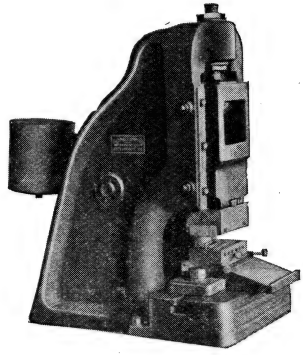
**Automatic Envelope Addresser** is motor driven. It feeds and addresses automatically envelopes, cards, etc., of various sizes, at a speed of 15,000 per hour. It prints from plates of the same design as used on other equipment of this company.

### Prices

Practically all machines are built to conform to individual conditions and, therefore, vary considerably in construction making it impossible to announce definite price quotations.

## QUANTITAG

The Quantitag is designed for embossing quantities of metal tags of the same design, by means of steel type or dies. The entire tag is embossed in one operation. The outfit consists of (1) a font of interchangeable steel type, (2) the type holder, and (3) the embossing machine. Metal tags, similar to those embossed with the Unitag, (described on p. 116), are used.



**The type** is 3/16-inch high, made of tool steel. Standard equipment comprises one font of 260 pieces of type, plus 75 spaces, 8 periods, 6 commas and 6 dashes. Any practical arrangement of type form can be made.

**The typeholder** in which is placed the type to make up the form, has a capacity of five 8-inch lines, each line holding approximately twenty 3/16-inch characters.

**The embossing unit** is designed like a punch press. It is operated by a foot pedal working through a toggle joint action. It is mounted on a heavy stand.

In operating, the holder containing the type form, is placed in the lower jaw of the embosser, the type serving as a die. A wooden block, set in the upper jaw of the embosser, acts as a backing die. The pressure applied by both dies on the tag or plate, accomplishes the embossing.

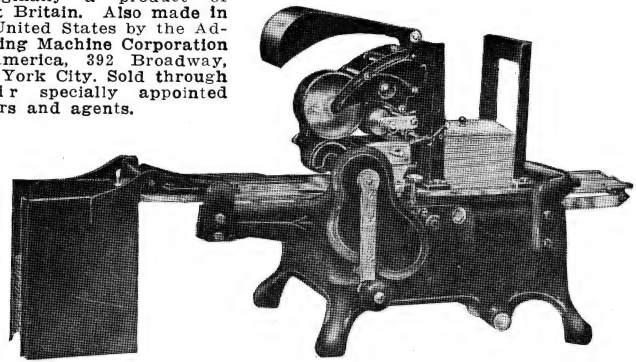
### Models and Prices

Made in one model only, complete with font of type and holder; weight 500 pounds; occupies floor space 30 x 27 inches. Price....$463.00

Other products of the James H. Matthews Company comprise a great variety of steel dies and equipment for embossing or punching characters or designs, individually or in made-up combinations of words or numbers, in metal.

## RONEO

Originally a product of Great Britain. Also made in the United States by the Addressing Machine Corporation of America, 392 Broadway, New York City. Sold through their specially appointed dealers and agents.



A stencil type of machine, printing with ink. The stencil, which may be cut on any typewriter without the use of special attachments, is mounted for use in the machine, in a rigid fibre frame. Frames are supplied in two designs for use in any model. **The Card Index Frames** are provided with a blank space 2 x 4 inches on which may be printed an index or record form to suit the needs of the user. **Two-In-One Frames** are equipped to hold two stencils and do not have the card index space.

A feature of the electric model, is the semi-automatic handling of envelopes. The envelope is placed on the feeding table and without any further attention from the operator, it travels automatically forward to the printing position and is delivered, stacked, to a hopper at the rear of the machine.

May be equipped to print consecutively, repeat, or skip stencils as desired. The inking is automatic.

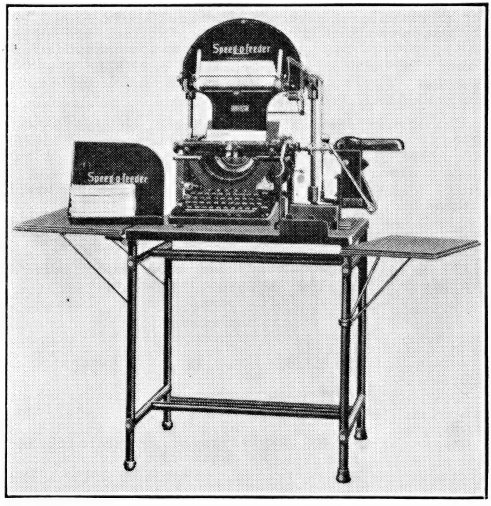
The hand operated model No. 15, differs from the Model No. 1 in that it is designed for concerns having very small lists and operates at a reduced speed. It is inked from a felt distributing roller, which carries the supply to the metal impression segment.

### Models, Descriptions and Prices

| Model | Price |
|---|---|
| No. 1—Hand Rotary, automatic inking, and envelope ejecting | $125.00 |
| Electrically operated; feeds 30 to 40 addresses per minute | 325.00 |
| No. 15—Hand operated; built on a cabinet to hold the stencils | 40.00 |
| Paratype Address blanks, mounted, per 1000 | 9.50 |
| Card Index Address frames, per 1000 | 15.50 |
| Two-in-one Address frames, per 1000 | 15.50 |
| Steel cabinet for filing address cards: | |
| No. 1, capacity 2500 single, or 5,000 double | 30.00 |
| No. 2, capacity 5000 single, or 10,000 double | 45.00 |

## SPEED-O-FEEDER

Made by the American Speed-o-Feeder Company, Cleveland, Ohio. Sold direct by their own representatives from branch offices in the larger cities.




The Speed-o-Feeder is an appliance, made to work in connection with any standard typewriter, to automatically feed envelopes as they are addressed, or statements, letters for fill in, and other similar forms.

It consists of a hopper in which a supply of envelopes or other material to be typed is placed, and from this they are fed one at a time into the carriage of the typewriter. A movement of a lever at the right of the machine brings the envelope or other form to the desired printing point. The typing and spacing between words and lines is done by the regular devices on the typewriter.

After the address or other matter has been typed, a stroke of the operating lever ejects the finished form, counts it in a register provided with a reset device, and feeds a new blank to the proper position ready for typing.

When feeding envelopes, a list holder, moving from name to name automatically, as each envelope is addressed, is adjustable to any spacing from telephone book addresses to three line typewritten addresses.

Adjustments are provided to locate the address on any part of a large or small envelope.

A holder is provided at the side of the machine for index or address cards. A tray on the left side of the machine is conveniently placed to receive the finished copies.

The regular use of the typewriter is not impaired. When needed for letter writing, the feeding device is swung away from the typewriter, allowing it to be used on or lifted off the stand.

### Models and Prices

The machine complete, which can be fitted to any standard typewriter, is $245.00 exclusive of the typewriter.

## UNITAG

**Made by James H. Matthews & Company. General offices and factory, 3942 Forbes Street, Pittsburgh, Pa. Sold direct and through specially appointed dealers and agents.**

The Unitag is designed to provide embossed, indestructible metal tags for shipments of steel or similar articles likely to receive rough handling. It embosses three-sixteenth inch letters on metal tags, letter by letter. Its operation and general appearance is similar to a stencil cutting machine. Metal tags, supplied by the makers, can be had in several different designs. The standard size is 5½ x 2½ inches with rounded corners and slots, or holes, for attaching.

The tag is inserted in a carrier in the machine, which holds it firmly in place; the operator swings the hand wheel either way until the wanted character die is in position (as indicated by a pointer on the dial), then pushes down the handle, embossing and spacing each character until the entire address has been completed. Each character as it is embossed is visible.

### Models and Prices

Made in one model only, cast iron with tool steel dies. Weight approximately 100 pounds. Price.....$225.00

## WALLACE

Made by the Wallace Addressing Machine Company, Incorporated, 116-118 West 14th Street, New York City. Sold direct by their own representatives.

Stencil type addressing machines, built to special order for regular commercial or newspaper work. Addresses are typed on stencils mounted in heavy cardboard frames. A special typewriter attachment is required to hold the frames while the stencils are being cut. Both regular and index types of stencil mountings can be used.

### Models, Descriptions and Prices

**Addressing Units**

Model A, Automatic feed, wrapper cutting and addressing machine. Can be adjusted to cut in lengths of even inches from one inch to 25 inches. The paper from which the wrappers are made is carried in a roll above the machine: the width of the wrapper is determined by the width of the paper roll. Surplus ink is removed automatically from stencil after each printing to insure clear impressions from the stencil during its lifetime. Each stencil is visible and in reading position while operating.
Price: For 14-inch wrappers.....$500.00
For 18-inch wrappers ..... 550.00

Model B, Hand fed, for addressing envelopes, statements or wrappers. Can be set for consecutive, duplicate or repeat impressions. An adjustable impression lever permits addressing on the margin of newspapers, periodicals, etc. Price, hand fed..... 400.00
Back geared motor for Models A or B, extra..... 85.00

Model C, a smaller type for general office use. Speed varies according to the ability of the operator, with a fair average of 2000 to 4000 per hour. Price, hand fed, equipped with DC motor.... 225.00

## WALLACE—continued

### Attachments

**Attachments**

| | |
|---|---|
| Dick Mailer Strip (on Model A only); for imprinting addresses on a continuous strip for use in a Dick mailer | 75.00 |
| Return Card Printer (on Model A only); for imprinting return cards on wrappers as they are addressed. Price for single inpression. | 150.00 |
| Price for double impression | 200.00 |
| Automatic Counter, for registering the number of impressions made. | 20.00 |
| Payroll attachment (on Models B and C only); provides for placing the payroll sheet in the machine and listing the names at proper intervals, or to run a continuous transcript of addresses | 75.00 |
| Duplicating and Triplicating Attachment (on Models B and C only); facilitates the addressing of envelopes, statements and bills. It is adapted particularly to address bills on which the same address appears twice, or three times | 50.00 |
| Transcript or Proof Attachment | 50.00 |
| Stencils, regular size, per M | 13.50 |
| Stencils, large record size, per M | 17.50 |

*If this book has not helped you, it is because you have not studied it properly. Whenever a more thorough work on business machines is published, this company will publish it.*

# Autographic Registers

Autographic Registers provide a medium for the writing of all kinds of business records, especially the kind which can be filled out with pencil on printed forms. Carbon copies are automatically made through the writing of the original.

Practically all manufacturers of Autographic Registers make a business of furnishing supplies of printed forms, wound in continuous rolls or in interfolded continuous strips, for use in such registers.

It is difficult to show, in an intelligent arrangement, the prices of such machines because of the wide range of sizes to accommodate the requirements of the different sizes of forms, and because of other factors influencing the price, such as discounts for quantity orders of registers or supplies.

## Systems

An outstanding convenience of Autographic Registers is that a number of business forms can be combined and made in one writing. By means of clever designing of the duplicate copies, the writing of a bill automatically makes of the carbon copies, separate charge and delivery tickets. The different manfuacturers have worked out and offer to users, a multitude of systems for all kinds of businesses and to cover the usual and special contingencies. They particularly stress their ability to protect all parties to a transaction.

## Construction

The fundamental differences of design are:

**Recorder Type:** Is the name generally given to registers that retain a copy of each issued ticket in a compartment (usually provided with a lock) in the machine, and issue all other copies. Some registers of this type are equipped to retain two copies. A total of from two to five copies can be made in the one writing.

**Summary Record:** Generally similar to the recorder type except that the arrangement of the carbon sheet and the ejecting mechanism provides for the making of a single line record on the retained copy. As the ejected copies are issued, the movement of the retained copy is automatically retarded to allow just sufficient spacing for the next line record. Thus, a condensed, easily visualized and summary record is available at the end of the day. The form arrangement of the issued tickets provides (usually at the bottom) a space for the entering of records that appear on the summary strip, such as total amount of sale, clerk's initial, department number, date, etc.

**Manifolder Type:** Issues all tickets (does not retain a copy.)

## Operation

**Crank operated** registers, either recorder or manifolder types, have their ejecting and rewinding mechanism operated by a crank located on the side of the register.

**Pull-Out operated** registers have a device to start the ejection of the tickets so that they may be grasped and pulled out by the operator. On the recording types, the rewind device is actuated by the pulling out of the forms.

**Alignment:** Various devices have been incorporated in the registers by different manfacturers to secure permanent and automatic alignment of the original and all copies, (i. e.: that in the feeding operation, the lines on the original and carbon copies will match evenly), and to provide uniform lengths of tickets as they are ejected.

Description of the alignment features of each model is given on the following pages. Some models of nearly every make are without the alignment feature.

**Carbon paper** in rolls suited to the size of each register is stored in and fed from a holder on the side of the machine and interleaved between the continuous ticket forms. It is held in position by clamps and fed as required.

## AMERICAN SALES BOOK COMPANY

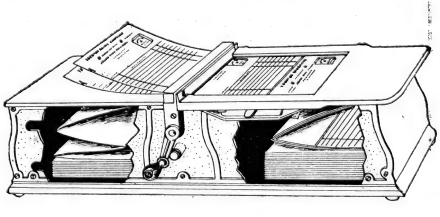
Made by the American Sales Book Company, Limited. Executive offices, Elmira, New York. Sold east of the Rocky Mountains by their own specially appointed salesmen; west of the Rocky Mountains by the Pacific Manifolding Book Company, Emeryville, California.

A wide variety of models, sizes and types of Autographic Registers, representing designs and improvements resulting from more than thirty years' experience in the manufacture of Autographic Registers and supplies.

### WIZ Flat Packet Autographic Register

A crank operated register, distinctive because of its use of flat packets of continuous interfolded forms instead of the usual single wound forms on rolls. An original and as many copies as are usually desired, are supplied, printed, in individual continuous strips, perforated between the forms, each copy bearing a corresponding consecutive number, all collated and interfolded in a zigzag form in a single packet ready for use. Each strip (or copy) may be of a different color or quality of paper, or printed in different colors of ink.

The loading of registers for all copies is done by the one operation of placing the packet in a compartment, and interleaving the carbon sheets between the first forms.



Models are made to issue one or more or all copies or retain one or more copies. The retained copies are refolded automatically in zigzag form in a locked compartment in the front of the machine.

A resulting convenience of the zigzag arrangement of the flat pile, formed by the record strips, is that it is possible to refer instantly to any ticket without having to unroll a rewound strip. Any ticket may be referred to regardless of whether the audit strip is in or out of the machine. The record strip is convenient to handle. It is flat and does not curl. The location of tickets by their consecutive numbers is made easy by the folded order of the record strip.

# American Sales Book Company, Ltd.

*Originator of*

## Sales Check Books and Short Account Credit Registers

*Executive Office*

**Railroad Avenue Fourth and Magee Streets**

**ELMIRA, N. Y.**

**Factories—Niagara Falls, N. Y., and Elmira, N. Y.**

### *Sales Check Books*

We are the originators of sales check books and are prepared to give the broadest assistance in designing new forms to meet any sales checking problem.

### *Continuous Interfolded Forms*

For use in billing, invoicing and for shop orders. Our interfolded forms offer the widest possible diversity to meet the requirements of every system. Combinations are afforded of different grades, weights, qualities or colors of paper printed with one, two and three colors of ink different on each sheet.

### *Manifold Books*

Every style: duplicate, triplicate or quadruplicate. Also automatic carbon back books without separate or loose carbon sheets.

### *Autographic Registers*

For shipping, billing, selling. We make supplies for practically all makes of autographic registers.

### *Credit Registers*

For simplified bookkeeping. Stop over-trading, reduce outstanding accounts, reduce errors, reduce cost of bookkeeping.

### *Cafe, Restaurant and Soda Checks*

Modern checking systems that fully protect the proprietor.

### *Business Forms*

There is a remedy for every leak and loss in your business. May we help you apply it? Our forty years' experience as founders of this line, place us in a unique position to render you special service without extra charge.

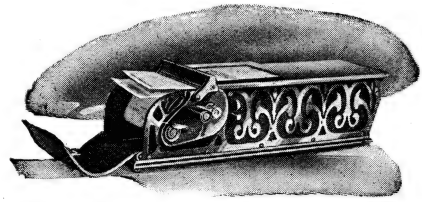
***Agencies in all Principal Cities. Phone the one nearest you for personal service.***

## AMERICAN SALES BOOK COMPANY—continued

**Registration:** Alignment and uniform length are provided by two punched holes at the top of each ticket.

**Construction:** Sides, end and base are made of gray iron castings, Parkerized (rust-proofed), finished in black lacquer; nickel plated brass top.

### American Automatic Aliner



A crank operated aligning autographic register using forms on individually printed rolls. A distinctive feature of this model is that no spindles or springs are used to hold the supply rolls of paper. In loading, each roll is dropped in its compartment and after the first copies have been interleaved with carbon paper, the machine is ready for use. All copies may be issued, or one copy retained and rewound in a locked compartment.

**Registration:** Alignment is secured by means of two filing holes in each ticket. The paper stops mechanically at the proper place each time with the punched holes at the proper distance from the tear-off. Tickets of different lengths may be substituted at any time without changing or adjusting the machine. The position of the punched holes in the paper determines the length of the tickets.

**Construction:** Sides, ends and base are made of gray iron castings, Parkerized (rust-proofed); finished in black lacquer, nickel plated sheet brass top.

**Sizes:** Made to issue original and all (three or more) copies, or to retain one copy rewound in a locked compartment. Width sizes are fixed; tickets of any length up to 11 inches may be used.

### Invincible Summary Record Register

Provides for the making of a one line record of each transaction. This machine produces two complete copies of the transaction and the sales tickets are designed with space to enter check number, date, salesman's number, amount of sale, and amount received, or other similar information, and by arrangement of the carbon paper, this part of the transaction only is recorded on the triplicate rewound sheet. As the original and duplicate are issued, the third sheet travels just far enough forward to make room for the next entry. The summary record is rewound on a spindle in a locked compartment.

### Niagara Triplicator

A pull-out type of Autographic Register, providing an original and one or more copies. Tickets used in this register may be of any length not to exceed 12 inches, but the width is fixed.

## AMERICAN SALES BOOK COMPANY—continued

### Manigraph

A portable type to produce duplicate or triplicate copies at the one writing. A special feature of this register is that only one roll of paper is used, whether duplicate or triplicate copies are to be produced. The tickets are printed in sets of two or three on the one strip of paper, depending on whether duplicate or triplicate tickets are wanted.

The paper, when placed in the machine, is so arranged over rollers that the tickets, when ready to write on, are one above the other. The carbon paper is in a roll and when drawn across the writing plate between the tickets, it produces the duplicate and triplicate copies. The tickets are drawn out of the machine in one piece, the duplicate and triplicate following the original, and may be separated at a perforated line between each ticket. Particularly useful in lumber, coal and building material yards.

### Invincible Full Record Filing Register

A crank operated autographic register in which the full record copy is automatically cut off and filed on a spindle within the machine. Either one or two record copies may be so retained.

A distinctive feature is that a new supply of rolls may be placed in the machine without the necessity of opening the filing compartment. The length of the ticket may vary up to 7¼ inches to suit the individual requirements.

**Construction:** Outside castings are made of brass, the locked compartment being solid and the supply compartment being of filigree design, nickel plated finish.

A model of this type of machine is also made, which instead of cutting off the record copy, rewinds it on a spindle in the locked compartment inside the machine. This model will use tickets up to 12 inches in length.

### Models and Prices

(Definite prices depend on the size of the ticket issued, the number of copies provided, and the number of machines ordered).

| Model | Slip Sizes | Total Number of Sizes | Price Range |
|---|---|---|---|
| **WIZ:** | 4"x6" to 8½"x8½"... | 5 | $33.50 to $47.50 |
| **American Automatic Aliner:** | 4⅜" to 8⅜" wide and any length to 11".. | 4 | 35.00 to 70.00 |
| **Invincible:** | | | |
| Full record cut-off: | 3⅝" to 8⅜" wide and any length to 7¼".. | 4 | 42.60 to 63.60 |
| Full record roll-up: | 3⅝" to 8⅜" wide and any length to 7¼".. | 4 | 26.40 to 43.80 |
| Summary record roll-up: | 3⅝" to 8⅜" wide and any length to 7¼".. | 4 | 41.40 to 57.00 |
| **Niagara Triplicator:** | 4⅜" to 8⅜" wide and any length to 12".. | 4 | 10.00 to 20.50 |
| **Manigraph:** | 3¾"x5" to 7¼" to 8¾" | 7 | 17.70 to 26.10 |

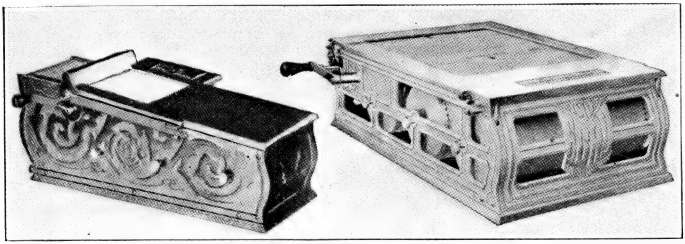
## CHAMPION

See Sale-o-graph.

## EGRY

Made by the Egry Register Company, Dayton, Ohio. Sold through their own sales force.

Two distinct designs of Autographic Registers are made by this company:



### True Line Models

The distinctive feature of this type is the method of alignment and ejection of forms. When the crank is turned the paper travels out of the register over a pin-studded guide wheel device, the studs in the wheel entering round perforations, (extending at regular distances, continuously on both sides of the paper forms), gripping the paper, and assuring of positive ejection and perfect registration. No discharge gripping rollers are employed. One turn of the register handle issues a full set of forms to a predetermined uniform size.

**Roll Record Models** are constructed to carry three rolls, issuing an original and duplicate, and retaining a third copy rewound on a record roll under lock and key in the machine. One or all copies may be printed. It may be adjusted to issue forms in lengths of three inches, and by half inch steps, to ten inches.

**Manifolder Models** are regularly constructed to carry three rolls and issue all three forms, one or all of which may be printed, if desired. Additional roll sections may be added to increase the number of copies to the extent of four or more, as desired. The length of form may be from three inches to eleven inches long by half inch steps, as required.

Separate models are made, in all widths, to discharge the forms either at the front or side.

### Pressure Roller Models

These models differ from the True Line Models, above described, in that, instead of the pin studded guide device by which the forms are ejected and alignment secured, these models have steel pressure rollers which grip the paper.

## EGRY—continued

**Roll Record Models** are regularly constructed to issue three full forms of each transaction, two of which may be discharged and a third copy rewound on a spindle under lock and key in the machine; or all three copies may be discharged and none retained, if desired. The original and duplicate may be printed; the third copy is invariably unprinted and unnumbered.

The form may be of any length from four inches to ten inches, by half inch steps, as required. One turn of the operating handle issues a full set of forms to a predetermined size.

**Pull-Out Manifolder Models** are designed for hand extraction of forms. Separate models are made for the extraction of forms from front, side or rear. All copies are issued. In regular construction, these models are equipped to carry three rolls, to produce an original, duplicate and triplicate of each form. Sections may be added to increase the number of copies to the extent of four or more, as may be required.

Forms for front or rear extraction may be any length; forms for side extraction may be any width.

**Construction:** All models are of all metal construction. Lid and working parts are of brass; sides and base are of cast iron. On True Line Models the guide wheel assembly is a die cast unit; the operating handle is irreversible and equipped with automatic stop to insure exact uniform lengths of tickets. All models have nickle plated trim.

### Models and Prices

| | | | | | | |
|---|---|---|---|---|---|---|
| **Trueline Roll Record:** (With pin studded wheel feed). Issues tickets any length from 3" to 10". | Ticket widths: | | 4 5/16" | 5¾" | 6½" | 8½" |
| | **Model** | | **561** | ..... | **562** | **563** |
| | Price, | (3-rolls) | $45.00 | ..... | $47.50 | $50.00 |
| **Trueline Manifolder:** (With pin studded wheel feed). Issues tickets any length (on front or rear discharge types) or any width (on side discharge types) from 3" to 11". | **Model** | | **504** | **505** | **506** | **508** |
| | Price, | (3-rolls) | $35.00 | $37.50 | $40.00 | $42.50 |
| | Price, | (4-rolls) | 37.50 | 40.00 | 42.50 | 45.00 |
| | Price, | (5-rolls) | 42.50 | 45.00 | 47.50 | 50.00 |
| | Price, | (6-rolls) | 47.50 | 50.00 | 52.50 | 55.00 |
| **Roll Record:** (Pressure roller feed). Issues tickets any length from 4" to 10". | **Model** | | **61** | ..... | **62** | **63** |
| | Price, | (3-rolls) | $35.00 | ..... | $37.50 | $40.00 |
| **Pull-Out Manifolders:** Issues tickets any length. | **Model** | | **97** | **98** | **98½** | **99** |
| | Price | (3-rolls) | $18.00 | $20.00 | $21.00 | $22.00 |

Prices includes 5000 sets of tickets, printed.

## GLOBE

Made by the Globe Register Company, Cincinnati, Ohio. Sold by their own sales force through branch offices in principal cities.

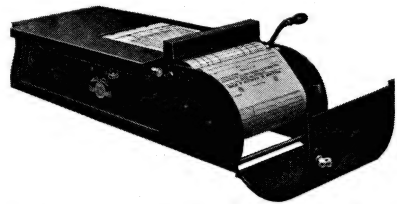
A feature of these autographic registers, is that the same register, without alteration, can be used as—

A manifolder, issuing all copies;

A full record register showing on the locked-in copy everything written on the original;

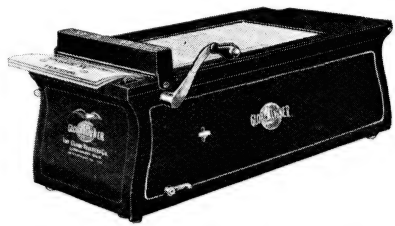
A summary record register showing on the locked-in copy only one or two lines, usually the total amount.

The record copy may be printed and numbered.



Recorder Model, Will Issue All or Retain One Ticket, or Summary

**Registration:** All copies are aligned automatically and registration secured by means of two round perforations at the top of each slip. Impression wheels actuated by a crank, carry the original and all copies until the perforations come to a point directly between the contact of the upper and lower impression wheels. Thus, friction is lost and the movement of the sheet is stopped. Should one copy arrive at that point before the rest, it will remain stationary until the other copies come up and meet it. All copies when issued are the same uniform size. The operator cannot turn the paper beyond the correct tearing-off point. To provide a summary record, one copy (the copy to stay in the machine), is perforated at shorter distances than all the others, thereby affording it less movement. The ratio of movement can be regulated by the punching at the time the forms are printed.



Aligner Model, Same as Above, Without Rewind Compartment

**Construction:** Heavy gauge steel, reinforced at all friction points with heavy steel bearings. Black enameled finish with nickel trimming.

**Sizes:** Made in three, four and five roll capacities and standard widths as shown below. Slips may be of any length desired up to 11 inches (except where otherwise noted). A record roll compartment equipped with lock, will hold a full length roll.

## GLOBE—continued

### Models and Prices

| Model | Slip Widths | 4¼" | 5¾" | 6½" | 8½" |
|---|---|---|---|---|---|
| **Aligner,** (issues all 3 copies).. | **Model** | **GA-44** | **GA-45** | **GA-46** | **GA-48** |
| | Price | $30.00 | $35.00 | $37.50 | $40.00 |
| **Recorder,** (retains one copy)... | **Model** | **GAR-54** | **GAR-55** | **GAR-56** | **GAR-58** |
| | Price | $35.00 | $40.00 | $45.00 | $47.50 |

Above prices are for 3-roll machines.

For 4-roll equipment on either model add $5.00; for 5-roll equipment on Aligner models only, add $8.00.

**Model GA-34 Duplicator,** (issues two copies) 4¼x6 inch size only....$20.00

**Model GAR, Jr. Recorder** (retains one copy, issues two) 4¼x7½-inch size or smaller..... 30.00

Side writer for any model, extra..... 1.50

For models equipped with cash drawers, see "Combination Registers".

## HAMILTON

See United (Uarco)—Hamilton

## MEMO-CHECK

Made by the Bliss Company, Incorporated, 19 Park Place, New York City. Sold through specially appointed dealers and agents.




A small, compact autographic device for writing memorandums, orders, etc., and providing a carbon checking copy rewound on a spindle.

Blank paper or printed forms in a double wound roll (or two rolls single wound) is stored in a compartment from which it is threaded in a double strip over the flat writing bed. Interleaved between the two strips and clipped in position is a sheet of carbon paper, supplied and replenished from a roll held in a supply magazine at the side. After a memorandum has been written, the strip is turned out by pressure rollers operated from knurled knobs at either side of the writing surface; the original or top strip is brought under a cutting knife and may be torn off, the duplicate rewinds on the spindle.

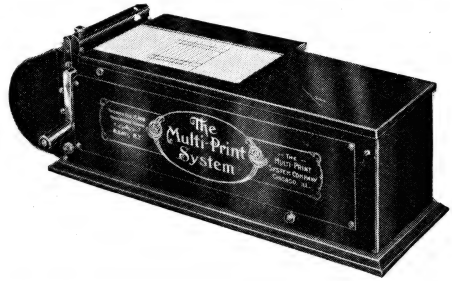
### Models and Prices

Memo-Check, as above, with duplicate copy rewound on spindle.....$6.50

Memo-Check Junior, original only..... 1.50

## MULTI-PRINT

Made by the Multi-Print System Company, Incorporated. Factory, Neenah, Wisconsin. Sales department, Transportation Building, Chicago, Illinois.




An autographic register having a self-contained printing mechanism that prints its forms as used.

A rubber form (similar to a rubber stamp form) is made to the specifications of the user and mounted on a cylinder or roller within the machine. As the paper, contained in continuous blank rolls within the machine, is fed through by the issuing of each slip, the next slip (original and duplicate) is printed. The rubber type form is renewable and interchangeable.

The standard style register issues two printed forms and retains a third copy locked in the machine. All copies may be issued, if desired. Tickets are not numbered; a cyclometer counter at the side of the machine counts tickets as issued.

Alignment of duplicate and triplicate with the original ticket is secured by pressure rollers. An automatic stop controls the crank to provide uniform length of tickets.

Construction is of cold rolled sheet steel, dust-proof.

### Models and Prices

(Tickets may be of any length from 4 to 9 inches)

| Width of ticket | No. 1—4⅛" | No. 2—5½" | No. 3—8¼" |
|---|---|---|---|
| **With rewind** (one copy retained).... | $40.00 | $60.00 | $75.00 |
| **Without rewind** (all copies issued).. | 40.00 | 60.00 | 75.00 |

For models equipped with cash drawer see section "Combination Registers."

## NATIONAL

Made by the National Cash Register Company. Main office and factory, Dayton, Ohio. Sold exclusively through branch offices and salesmen.

### Manifolding Autographic

A crank operated roll record register, providing three copies of standard size, $4\frac{5}{16}$x5", two of which are issued and the third rewound in the machine.

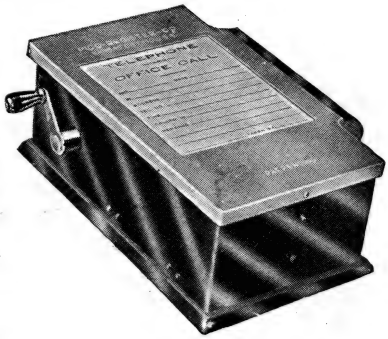
### Desk Autographic

Combining a cash drawer opened by a set of combination keys and a lever. One line records, which are not compulsory, are made through an aperture in the desk top on a continuous sheet ruled into vertical columns for each kind of transaction; spaced and rewound as the drawer is opened.

### Models and Prices

Model No. 20, Manifolding Autographic, iron construction.....$30.00
Model No. 30, Manifolding Autographic, brass construction..... 40.00
Model No. 45, Desk Autographic, oak finish..... 50.00
Model No. 57, Desk Autographic, mahogany finish.....100.00

## PICO'S MEMOCHINE

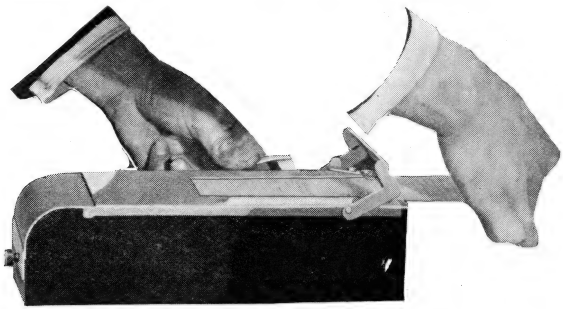



Made by Pico Register Company, 2311 East Twelfth Street, Kansas City, Missouri. Sold direct.

A small autographic register, for use by executives for telephone memorandums, price quotation records, written orders, etc. It issues one ticket 3⅜ inches wide by 5 inches long, and retains a carbon copy rewound in the machine. The over-all size is 6¾ inches long, 5 inches wide, 3 inches high. Crank operated, all metal dustproof construction. Price.$10.00

## THE SALE-O-GRAPH

Made by the Champion Register Company, 70th and Colfax Avenue, Cleveland, Ohio. Sold through their own salesmen.



The Sale-O-Graph is an Autographic register using multifolded instead of the usual rolled supply of printed sales slips.

It comprises a metal cabinet in which is stored a supply of 250 sets of sales slips, (single, duplicate or triplicate). The slip is filled out in the usual manner on the machine, after which the pressure of a lever releases it and moves it forward, so that it can be pulled out and torn off. All copies are removed—none remaining in the machine.

### Models and Prices

Model 1, For standard size (3⅜x5½ inches) sales slips.....$15.00
Model 2, For extra size (6¾x5½ or 11 inches) sales slips..... 22.50
Model 3 For bills of lading (8½ inches wide x any length)..... 30.00

## PRINTING REGISTER

Manufactured by the Printing Register Company, 1430 Twenty-first Street, Detroit, Michigan. Sold through specially appointed dealers and agents.

A self-printing manifolding autographic register that automatically prints forms as they are used. The paper is carried in blank rolls in the machine and as a crank is turned to eject one set of slips, the next form is automatically printed.

Printing of all copies is made from metal electros with specially prepared ink, manufactured by the company. Each form as it is ejected, is freshly printed but the ink cannot be smeared; the impressions are clean and sharp. Any combination of colors of either ink or paper may be used (any color ink for each form and any color of paper for each form). Each form (the original and all copies) can be automatically numbered in consecutive order. Devices are provided within the machine to punch holes, if desired, for filing the slip that is issued, or to make stub slips with ruled perforations, at any position on the form.

Alignment is automatic and positive, being secured by gripper pins that engage the slip at the top as it is carried through the feed rolls. From one to five copies may be made, and if desired, one rewound in a locked compartment within the machine.

### Models and Prices

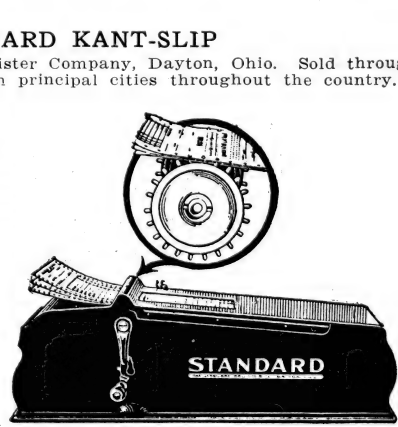
(Slip widths are in standard sizes, but the length may be any size from 5 to 9 inches.)

| | |
|---|---|
| Model No. 34, 3-roll capacity, 4¼-inch slip | $63.50 |
| Model No. 36, 3-roll capacity, 6 -inch slip | 68.50 |
| Model No. 38, 3-roll capacity, 8 -inch slip | 72.60 |
| Numbering heads, 5 wheel capacity, extra | 9.00 |
| Re-roll device, extra | 9.00 |

## STANDARD KANT-SLIP

Made by The Standard Register Company, Dayton, Ohio. Sold through branch offices and salesmen in principal cities throughout the country.

Comprises a line of autographic registers, the most distinctive feature of which is the method of providing accurate registration of all copies. A series of pins imbedded in the feed rollers on each side of the sheet, engage marginal holes in the forms securing positive alignment of all copies. During the forward movement of the paper, a pressure roller permits the sheets to advance freely, but at the termination of the feeding operation, automatically clamps and holds them tight while being torn off and also while the next sheet is being written. It is crank operated. Construction is dust-proof, cold rolled sheet steel, electrically welded; finished with two coats of black enamel baked on.



## STANDARD KANT-SLIP—continued

A variety of ticket sizes are afforded in models that issue all copies or retain one copy rewound and locked on a spindle inside the machine. One model provides a summary record (one line record) rewound in the machine.

### Models, Specifications and Prices

**Style SC,** issues all of any number of copies of duplicate printed forms from two to six, in any size as listed below. Equipped with Kant-Slip pin wheel feature.

**Style SRC,** issues two to five copies and retains one copy rewound on a spindle and locked in the machine. All copies are printed and consecutively numbered. Equipped with Kant-Slip pin wheel feature. Sizes as listed below.

**Style TC, Total Summary Record,** issues an original and duplicate printed sales ticket and retains a total summary, (a numbered, one line record of each transaction,) rewound in the machine. Equipped with Kant-Slip pin wheel feature. Sizes as listed below.

**Standard Roll Record**—Special, is not equipped with Kant-Slip pin wheel feature and does not issue automatically measured forms. Issues one original printed sheet, one or two plain sheets and retains one plain sheet rolled inside as a locked-in record. Cast case, relief design, enameled in black, with top and small parts nickeled. Made in one size only, 4¾ by 4 5/16-inch ticket. Price.....$21.00

**Style P Manifolder.** A pull-out machine; delivers one original printed copy and two duplicate printed or plain copies. Nickel-plated, filigree frame. Made in 4¾ by 4 5/16-inch ticket. Price.....$22.00

**Note:** Standard Roll Record Special and Style P Manifolder, will shortly be placed on the market in the pressed steel, dust-proof construction to match other models of the line.

**Sizes and Prices of Kant-Slip Models**

| Size No. | 1 | 2 | 3 | 4 | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Ticket sizes.. | 8½x11 | 8½x8½ | 8½x6½ | 6½x11 | 6½x8½ | 6½x6½ | 5¾x8½ |
| Style SC..... | $45.00 | $45.00 | $45.00 | $42.50 | $42.50 | $42.50 | $40.00 |
| Style SRC... | 65.00 | 65.00 | .65.00 | 62.50 | 62.50 | 62.50 | 55.00 |
| Style TC..... | 55.00 | 55.00 | 55.00 | 52.50 | 52.50 | 52.50 | 50.00 |

| Size No. | 9 | 11 | 12 | 12* | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|
| Ticket sizes.. | 5¾x6½ | 4 5/16x8½ | 4 5/16x6½ | 4 5/16x5 | 11x11 | 11x8½ | 11x6½ |
| Style SC..... | $40.00 | $37.50 | $37.50 | $37.50 | $50.00 | $50.00 | $50.00 |
| Style SRC... | 50.00 | 50.00 | 50.00 | 50.00 | 70.00 | 70.00 | 70.00 |
| Style TC..... | 50.00 | 47.50 | 47.50 | 47.50 | ——Not Made—— | | |

On all sizes of Style SC, extra for four rolls, $5.00; five rolls, $15.00; 6 rolls, $20.00..

On all sizes of SRC and TC, extra for four rolls, $10.00; five rolls, $15.00; six rolls, $20.00.

For models equipped with cash drawers, see "Combination Registers."

## UNITED (UARCO) HAMILTON

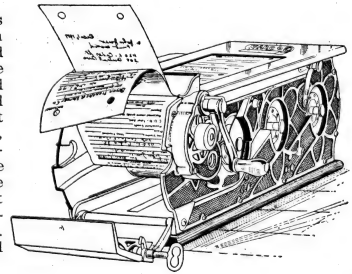
Sold in the West by the United Autographic Register Company, 2316 West 43rd St., Chicago, Illinois; in the East by the Hamilton Autographic Register Company, Hamilton, Ohio.

Comprising a line of several models in many sizes of autographic registers as described below, all made under the same patents and following the same designs:

For models equipped with cash drawers, see "Combination Registers".

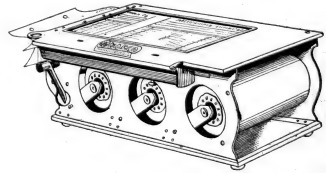
## UNITED (UARCO) HAMILTON—continued

### 1.—Crank, Detail Record Aligner Models



Crank operated record roll registers issuing two printed copies, in uniform lengths from 5 to 12½ inches, and retaining one rewound on a spindle in a locked compartment. The record roll copy may be numbered, ruled and printed the same as copies that are issued. As each form is issued, two steel pins, operating in conjunction with pressure rollers, engage two punched holes at the top of the following form, providing perfect alignment and automatically measuring the length of the ticket as issued. Cast cabinet, relief design, enameled finish.

### 2.—Crank, Manifolding Aligner Models



Lever release, crank operated, manifolding registers issuing all three printed copies, in uniform lengths from 5 to 11 inches, in perfect alignment. Two pin alignment feature, same as above described models. Smooth sheet metal construction, with improved loading facilities.

### 3.—Pull-Out, Manifolding Aligner Models

Pull-Out style of autographic registers, issuing all three printed copies in uniform lengths from 5 to 11 inches, the sheets being released and started by a lever and pulled out by hand. Alignment is secured automatically by the two pin alignment feature similar to the above described models. Construction is of smooth sheet steel, enamel finished.

A similar Pull-Out model is made with cast frame, finished in green enamel, relief design. Issues from two to five printed copies but does not retain a record copy. Equipped with two pin alignment feature.

### 4.—Combination Recorder and Manifolder

Crank operated manifolding or recording register, furnished standard to issue two printed copies, retaining one rewound on a spindle in locked compartment in the machine. A combination style can be furnished either to issue two and rewind one, or issue all three copies. Tickets may be in any length from 2½ to 8 inches. These models are not equipped with automatic alignment or measured stroke feature; the motion of the crank must be stopped when the desired length of ticket has been ejected. All models hold rolls containing 1000 tickets except model P-X which accommodates 500 ticket rolls.

## UNITED (UARCO) HAMILTON—continued

### 5.—Multigraphs

Manifolding type, lever release, pull-out registers, issuing all three printed copies in any length from 2½ to 12¼ inches; are not equipped with automatic perfect alignment or measured stroke features.

O style Multigraphs are made for "back pull-out" or "pull-toward-operator" use.

### Models and Prices

| Description | Form Widths | 3⅜" | 4 5/16" | 5½" | 6½" | 8½" | 11" |
|---|---|---|---|---|---|---|---|
| 1—Detail Record Aligner (crank) | Size No. | S-1 | S-X | S-2 | S-3 | S-4 | |
| | Price | $39.45 | $39.45 | $42.45 | $43.35 | $45.55 | |
| 2—Manfolding Aligner (crank) | Size No. | T-1 | T-X | T-2 | T-3 | T-4 | |
| | Price | $31.00 | $32.50 | $34.50 | $36.50 | $37.50 | |
| 3—Manifolding Aligner (pull-out) (Sheet steel design) | Size No. | | OK-1 | OK-2 | OK-3 | OK-4 | OK-5 |
| | Price | | $33.00 | $33.35 | $34.60 | $34.60 | $34.60 |
| Manifolding Aligner (pull-out) (Cast open design) | Size No. | | R-1 | R-X | R-2 | R-3 | R-4 |
| | Price | | $25.50 | $26.00 | $28.00 | $31.50 | $34.75 |
| 4—Record and Manifolder. | Size No. | | P-X | PP-2 | PP-3 | PP-4 | |
| | Price | | $22.00 | $25.00 | $30.50 | $33.00 | |
| 5—Multigraph Manifolder. | Size No. | | O-1 | O-2 | O-3 | O-4 | |
| | Price | | $30.66 | $33.33 | $34.66 | $36.00 | |

Duplograph, Size No. M-1, 2 rolls only 4 5/16"x2½" to 5" ticket....$16.00

*The fundamental idea of the DIGEST is different from anything else ever before applied to any line of business. If you do not entirely understand its reason and plan, read Pages 5 to 12.*

# Baling Presses

Business houses in increasing numbers are installing presses to bale their large accumulations of paper, cardboard, etc. The scarcity of pulp, rag stock and other paper making materials has created a big demand for baled waste paper. Paper mills and waste paper dealers are offering better prices than ever before. And because of the decreasing supply of wood pulp from which high grade paper is manufactured, every pound of paper that can be converted to the manufacture of new stock helps to prevent increased paper costs now and in the future.

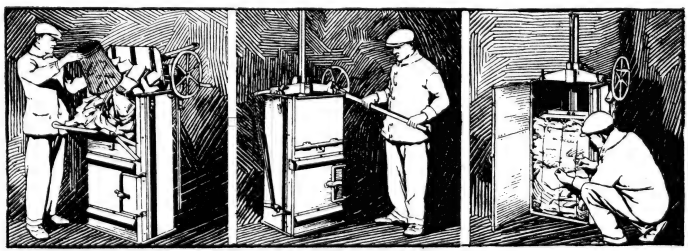
Baling presses, as made today, are of all metal construction, and provide a safety vault for scrap paper. Rate concessions are made by fire insurance companies for risks equipped with baling presses. The size commonly sold for office use occupies approximately four square feet of floor space. Models are also made for use in stores, factories and warehouses for the compressing and baling of fabric and metal material scraps and shavings as well as paper.

## Prices for Baled Waste Paper

The following prices are a composite of recent quotations from New York, Philadelphia, Boston, Pittsburgh and Chicago markets for baled waste paper:

| Grade | Per Cwt. | Grade | Per Cwt. |
|---|---|---|---|
| Folded News | $1.10-$1.20 | No. 1 hard white shavings | $3.50-$3.75 |
| White news cutting | 1.75- 1.85 | No. 1 soft white shavings | 3.25- 3.50 |
| Crumpled news | 1.05- 1.15 | Ledgers and writings | 2.25- 2.35 |
| Mixed paper | 1.00- 1.10 | Heavy book stock | 2.25- 2.50 |
| No. 1 kraft | 2.10- 2.25 | Light book stock | 1.85- 2.00 |
| No. 1 overissue news | 1.25- 1.35 | | |

Besides reducing the fire hazard, the revenue from the sale of waste paper, usually burned or thrown away, makes the purchase of a baling press a profitable investment.



## ECONOMY

Made by the Economy Baler Company, Ann Arbor, Michigan. Sold through specially appointed dealers and agents.

All steel construction; open front, open top, drop hopper door, fire proof. A long stroke plunger pushes material all the way down, requiring a minimum number of strokes to fill. Pressure is applied by a double chain windlass, operated by a lever and an auxiliary handle.

### Models and Prices

| Model | Description | Price |
|---|---|---|
| No. 14 | For small bales | $ 30.00 |
| No. 15 | For small bales | 40.00 |
| No. 1 | With automatically closing feed hopper, opened by foot pedal | 70.00 |
| No. 30 | Makes bale 30 x 16 x any dimension to 30" | 100.00 |
| No. 2 | Makes bale 24 x 20 x any dimension to 32". Opens front and back for covering or tying bale | 125.00 |
| No. 36 | Makes bale 36 x 20 x any dimension to 35" | 250.00 |
| No. 45 | Makes bale 45 x 24 x any dimension to 38" | 325.00 |
| No. 18 | For baling metal scraps | 250.00 |
| No. 22 | For baling metal scraps | 275.00 |

## FAMOUS

Made by the Famous Manufacturing Company. General office and factory, East Chicago, Indiana. Sold through specially appointed dealers and agents.

Construction is all metal, frame being sheet steel heavily reinforced. Pressure is applied by a hand lever and secondary handle, actuating a rack geared with a pinion. A shaft running through the hopper, has a pinion gear on each end, engaging the racks. As the shaft is forced down, it carries the plunger with it.

### Models and Prices

| Sizes | Weight of bale | Size of bale | Price |
|---|---|---|---|
| Small | 50- 75 lbs. | 18x14x24" | $ 30.00 |
| Medium | 60- 90 lbs. | 18x14x30" | 40.00 |
| Standard | 90-125 lbs. | 22x15x30" | 60.00 |
| Large | 125-200 lbs. | 28x15x30" | 80.00 |
| Extra | 150-250 lbs. | 38x15x30" | 100.00 |

## GALLAND-HENNING

Made by the Galland-Henning Manufacturing Company, Milwaukee, Wisconsin. Sold by specially appointed agents through branches in all principal cities.

All steel construction. The top opens wide for charging and the entire front opens for removal of the bale. Pressure is applied by a vertical rack geared with a pinion, operated by a hand wheel and lever.

### Models and Prices

| Model | No. 5-H | No. 6-H | No. 7-H |
|---|---|---|---|
| Bale Weight | 100-150 lbs. | 150-225 lbs. | 225-350 lbs. |
| Bale Size | 17x18x35" | 18x20x40" | 22x24x24 |
| Price | $60.00 | $75.00 | $115.00 |

## SCHICK

Made by the Davenport Manufacturing Company, Incorporated, Davenport, Iowa. Sold direct by mail.

All metal construction; body is 10 or 12 gauge steel, reinforced with steel angle bars; crucible steel castings, case hardened. There are five working parts: the pressing lever, the hand wheel, ratchet dog, shaft and pinion, and holding rack. Pressure is exerted by a geared rack and pinion.

As waste is accumulated, it is dumped into the bale from the top or through a hopper door in the upper part of the front side, and compressed by a turn of a hand wheel and by a lever which exerts a pressure of three tons. When the bale is complete the front is opened and the pressure maintained while the wires are adjusted and fastened. The entire front opens for easy removal of the bale.

### Models and Prices

| Model | No. 2 | No. 3 | No. 4 |
|---|---|---|---|
| Bale Weight | 125-150 lbs. | 150-225 lbs. | 250-375 lbs. |
| Bale Size | 17x18x35" | 18x20x40" | 22x24x44" |
| Price | $60.00 | $75.00 | $115.00 |

JAPAN and the ORIENT

We invite propositions from manufacturers who desire trained export representatives.

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HINODE TRADING COMPANY

1027 Wilson Avenue :: Chicago

# Billing Machines

# Bookkeeping Machines

See Section Following Typewriters

## ADVANCES AGAINST COMMISSIONS BELONG TO THE SALESMAN

(Published by permission of The Business Law Journal, 71-73 Murray Street, N. Y. C.)

Money advanced to a salesman by way of a drawing account or against his commissions belongs to the salesman. This is so, even though, at the termination of the employment, the sums advanced are in excess of the earned commissions. Such advances are not regarded as loans, but as sums paid to the agent, and to be repaid to the employer only out of earned commissions.

If the amount of commissions earned is insufficient to cover the total amount advanced, there is no obligation on the part of the agent to return the excess.

The parties may enter into an agreement under which the agent obligates himself to make good any amount received by him in excess of the commissions actually earned. But the language used must be to the point. A provision that advances constitute a first lien on all commissions or a charge against commissions earned, will not entitle the employer to demand a return of the amount by which the advances exceed the commissions.

If the employer wishes to be protected on this score, the contract should provide, in effect: "All sums advanced to the salesman are to be regarded as loans, and the salesman hereby agrees to be personally responsible, and upon demand of the employer at any time, (or at the termination of the employment), to repay to the employer the amount by which the sum advanced may be in excess of commissions actually earned."

References: Mixsell's Estate, 7 Pa. Co. Ct. 443; L. J. Wing Manufacturing Co. v. Thompson, 120 N. Y. Supp. 51.

### Agent May Recover Advances Agreed Upon But Unpaid

Not only is the agent entitled to retain money advanced to him in excess of commission earned, but, where the advances agreed upon have not been paid, the agent may compel the employer to pay them, even though the earned commissions are less than the advances claimed by the agent.

References: Lobsitz v. Leffler, Thiele & Co., 140 N. Y. App. Div. 14; Wolfsheimer v. Frankel, 130 N. Y. App. Div. 853, 115 N. Y. Supp. 958.

# Cash Registers

The inventor of the first successful cash register was James Ritty of Dayton, Ohio. His original idea was conceived and developed from a revolution counter on a steamship engine. His first registers were manufactured in Dayton, Ohio, in 1879.

To the late John H. Patterson, the founder of the National Cash Register Company, is due the credit for the development of the cash register to its present form and efficiency.



The First Cash Register

Mr. Patterson as a user, was attracted to the value and utility of the register made by Mr. Ritty, and in 1882, he purchased two at a price of $50.00 each, for use in the general store of a mine of which he was the proprietor. These registers, designed to record sales by punching holes in a roll of paper, did not have any adding mechanism. The paper roll was divided into columns corresponding to the key denominations and to find the totals of transactions registered, it was necessary to add up the number of holes punched in each column of the paper and multiply by the denomination of the column.

Mr. Ritty disposed of his business to parties, residents of Dayton, who formed the National Manufacturing Company of Dayton, Ohio, with a paid in capital of $12,000. In 1883 the first adding register, later called a "Detail Adder," was made. A short time later, when additional capital stock was issued, John Patterson and his brother, Frank, bought 50 shares for their joint account.

The early history and development of the cash register in the hands of the Pattersons is one of the romances of American business. Meeting obstacles ordinarily insurmountable, Mr. Patterson with the vision and determination that marked his entire business career, guided the company which he subsequently named the "National Cash Register Company," to its present enviable position in the world of business. Over two million registers have been sold to date and branches are established in every civilized country. More than 550 different models make up the present line and it is estimated that over 800 additional models have been marketed from time to time and are now discontinued.

The original primary function of the cash register, and the purpose for which his first two were purchased by Mr. Patterson, was to prevent dishonesty among clerks in retail stores. It is said that Mr. Patterson's first installation effected a saving of thousands of dollars in the first six months' use.

While every safeguard and design is still retained to prevent theft and pilfering, it is generally conceded that the main purpose of a cash register today is to provide a system to enforce the making and preserving of business records.

From the original machine which utilized a paper strip to record transactions, the cash register has been highly developed to suit the needs of practically any business. As many as twenty-seven individual totals and four printed records of each transaction may be provided by a single machine.

The production of the complicated multiple total, multiple printing register is confined almost exclusively to the National Cash Register Company. The simpler type of registers adapted for retail businesses are also made by several other companies.

Because of the number of models made by the National and other companies, it will be impossible in this volume, to be as detailed in descriptions of cash registers, as are the references to other machines.

## PRINCIPLES OF CASH REGISTER DESIGN AND OPERATION

### Detail Adder

The detail adder (now almost obsolete) is the earliest type of register excepting the original paper-roll machine. It is a non-printing register with counters connected individually with each key so that amounts registered by each key are totaled on separate counters. For instance: three depressions of the five-cent key would be shown on the counter for that key as 15c; four depressions of the ten-cent key would be shown on its counter as 40c, etc. Each counter is a single wheel divided into approximately thirty divisions (varying according to the make of the machine) and when a complete revolution of a counter has been made the total is transferred automatically to a second counter, marked in divisions of multiples of the totaling capacity of the first counter. As the transfer is made, the first counter automatically resets to zero. Detail adding registers, therefore, have two counters for each key, (a 21-key machine would have 42 counters). To ascertain the total of the day's sales at the close of business, it is necessary to read off and cross-add or set down for adding, the amount of each counter.

### Total Adder

The newer and present type of register is the total adder. It is the most widely used type. The total of the day's sales are carried and added in a single counter under the cover. Total adders may be equipped with or without counter resetting devices.




**Total Adder** **Detail Adder**

Illustrating Difference in Counters of Detail and Total Adding Registers. Note Double Individual Counters for Each Key on Detail Adder, and Single Total Counter for all Keys on Total Adder.

### Tied-up Counters

On some registers of early manufacture and on certain models of

## PRINCIPLES OF CASH REGISTER DESIGN AND OPERATION—continued

present day registers designed for department store use, the adding wheels cannot be turned back to zero (the machine cannot be cleared) and the total of any day's sales can only be told by substracting the previous day's total from the amount appearing in the total dials. The arrangement is very much the same as the "Season Mileage" total of an automobile speedometer. It cannot be set back without dismantling the mechanism.

### Free Counters

The modern type of register provides a means of resetting the total counter to zero at the end of each day's business or at other periods as may be required. Various resetting devices (usually a key) are provided by the different makers.

### Press-Down Key Type

The smaller models of registers for retail store use, utilize the press-down key principle in registering sales. The keys are usually arranged in two horizontal columns from which the mechanism is directly operated. Machines of this type do not have any operating crank or handle. They are made with or without printing devices for detail strip or customer's receipt. The indication of sale appears in numerals on flat metal tabs projected vertically and exhibited in a glass enclosed compartment in the top of the machine. The registration of a sale automatically clears away the previous indication.

### Push-In Key Type

The most comprehensive and versatile type of register is the push-in key type, as represented by the National 800 and 900 class and the American Cash Register Company's line of registers. The keyboard is arranged in vertical banks (columns) in decimal formation. The amount to be registered is first set up on the keyboard, similar to the way an item is set on the keyboard of a key-set adding machine, and the amount is registered by the operation of a crank or by an electric motor. The indication appears at the top of the machine and is made by drum type indicators working automatically. Various types of printing devices are employed to provide a detail record of all transactions, as well as customers' receipts.

### Lever-Set Type

This design is similar to that of lever-set calculating machines. The keyboard is arranged in vertical columns, in decimal formation, with indicating set-up levers operating in slots.

### Index Type

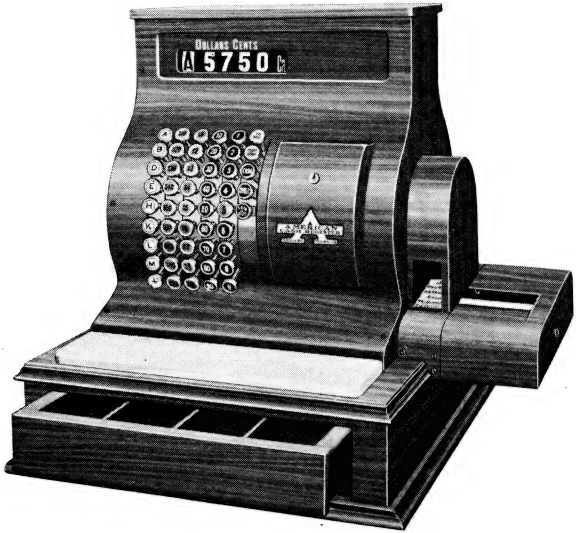
This type utilizes a movable pointer operating in connection with an indexed strip on which the registering denominations appear. The pointer is moved to position and the amount of the transaction is registered by the depression of the pointer, acting as a lever (as on the St. Louis Cash Register Company's machines), or by a crank.

### Multiple Cash Drawers

Many types of registers are made for operation in connection with more than one cash drawer. Cabinets for multiple drawers are designed for use on counters; others extend to the floor and provide separate cash drawers for as many as nine different clerks. Each cash drawer is operated from the clerk's initial key on the keyboard, and on the most highly developed type of register, separate totals are provided for each cash drawer in addition to the grand total of all transactions during the day.

## AMERICAN

Made by the American Cash Register Company, main offices and factory, Saginaw, Michigan. Sold through specially appointed dealers and agents.




The American line of cash registers comprises various models of push-in key type machines, key set and key operated. (There is no operating crank or handle.) All models are standardized and made of interchangeable parts. They are all the same size from the lowest to the highest priced, the only difference being the keyboard capacity and added equipment.

There are five distinct types. Each made in several keyboard capacities:

1. Those having no printing device.
2. Those equipped with a detail strip printer, providing an itemized printed strip of each day's business, showing (a) the nature of the transaction, whether cash, charge, received on account, or paid out, (b) the amount of the transaction, (c) the initial of the person making the transaction, or the designation of the department.
3. Those equipped with "Autogram" attachment—a device employing a detail strip of sufficient width to make pencil notes opposite the registration of each transaction.
4. Those equipped to issue a check (sometimes known as a receipt) in addition to printing a detail strip. Check shows consecutive number of transaction, date, amount and nature of transaction, clerk or department initial and advertisement of proprietor.
5. Those equipped with detail strip printer and autogram.

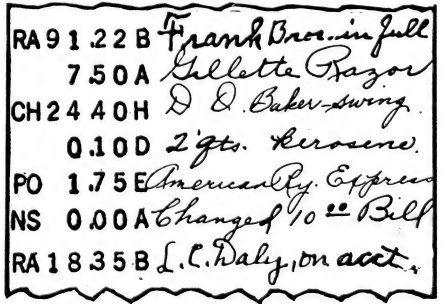
## AMERICAN—continued

All models except those noted may be equipped with extra adding counters up to four, for accumulating individual totals of special transactions of departments, clerks, etc.

### Special Features

Flexible keyboard, allowing a key which has been depressed in error, to be restored to normal by the operation of any other key in the column.

Error Lock. When any special keys, such as charge, paid out, etc., are depressed, the drawer will not operate until the complete transaction is registered by depressing the amount keys, when the "No Sale" key is operated, all value keys are locked, and when value keys are operated, the "No Sale" key is locked.




A Section of American Detail-strip

All department keys are operating keys—that is, when any one is depressed, the machine operates and the drawer opens, but the drawer cannot be opened until the complete record of each transaction is set up on the keyboard.

Other standard features include—indication of the amount and nature of transaction; "No Sale", "Customer" and lid counters; resetting devices for all counters.

### Models and Prices

Note: All machines have enameled cabinets, finished in mahogany, golden oak or walnut. All models are hand operated.

* All models, except those marked *, may be equipped with extra adding counters, not exceeding three, at an additional cost of $50 per each counter.

**Without Printing Device**

| Model | Key Arrangement | Price |
|---|---|---|
| *140 | 1c to $9.99 | $160.00 |
| *280 | 1c to $59.99 | 185.00 |

**With Detail Strip**

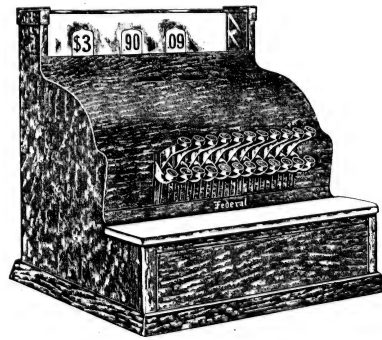
| | | |
|---|---|---|
| *141 | 1c to $9.99 | 185.00 |
| *281 | 1c to $59.99 | 210.00 |
| 301 | 1c to $9.99, 5 department keys | 220.00 |
| 421 | 1c to $99.99, 5 department keys | 245.00 |
| 541 | 1c to $9.99, 5 department keys, 6 initial keys | 245.00 |
| 661 | 1c to $99.99, 5 department keys, 9 initial keys | 270.00 |
| 701 | 1c to $999.99, 5 department keys, 9 initial keys | 295.00 |
| *142 | 1c to 99c | 210.00 |
| *282 | 1c to $59.99 | 235.00 |
| 302 | 1c to $9.99, 5 department keys | 245.00 |
| 422 | 1c to $99.99, 5 department keys | 270.00 |

## AMERICAN—continued
## Models and Prices—continued

| Model | Key Arrangement | Price |
|---|---|---|
| | **With Autogram Attachment** | |
| 542 | 1c to $9.99, 5 department keys, 6 initial keys | $270.00 |
| 662 | 1c to $99.99, 5 department keys, 9 initial keys | 295.00 |
| 702 | 1c to $999.99, 5 department keys, 9 initial keys | 320.00 |
| | **With Detail Strip and Check** | |
| 304 | 1c to $9.99, 5 department keys | 285.00 |
| 424 | 1c to $99.99, 5 department keys | 310.00 |
| 544 | 1c to $9.99, 5 department keys, 6 initial keys | 310.00 |
| 664 | 1c to $99.99, 5 department keys, 9 initial keys | 335.00 |
| 704 | 1c to $999.99, 5 department keys, 9 initial keys | 360.00 |
| | **With Autogram and Check** | |
| 305 | 1c to $9.99, 5 department keys | 310.00 |
| 425 | 1c to $99.99, 5 department keys | 335.00 |
| 545 | 1c to $9.99, 5 department keys, 6 initial keys | 335.00 |
| 665 | 1c to $99.99, 5 department keys, 9 initial keys | 360.00 |
| 705 | 1c to $999.99, 5 department keys, 9 initial keys | 385.00 |

## FEDERAL

Made by the Federal Cash Register Company, main offices and factory, Kansas City, Missouri. Sold through specially appointed dealers, covering exclusive territories.




Comprising a line of press-down key operated, total adding cash registers without printers. The total cash counter and transaction counters (customer's and no-sale counter) provided with resetting device, are conveniently situated so that readings may be seen through apertures in the cabinet; provided with a blind, controlled by a lock to prevent totals being read except by authorized persons. All counters are mounted on the same shaft and are all reset at the same time. Reset counter adds 1 each time the total and transaction counters are reset to zero and is not provided with a blind. Mechanism lock operated by a single key, locks the machine if desired so that it cannot be operated. Drawer release and compulsory closing of cash drawer before registering, are controlled from a single lock.

Cabinet is of pressed furniture steel, oak or mahogany (photographic reproduction) finish, one piece construction. Drawer and base are made of hardwood and are standard size. Indication is of the projected tab type enclosed on the top and sides with plate glass.

## FEDERAL—continued

### Models, Descriptions and Prices

Note: The first figure of model number denotes the class, the next two numbers denote number of keys, thus: Model 431 is a 400 Class with 31 keys. All models equipped with 5c key arrangement have keys for all multiples from 5c to 95c inclusive.

Dimensions: Height 17 inches, base 17⅝ inches wide by 16½ inches deep. Equipped with No. 2 cash drawer.

#### 300 Class

| Model | Key Arrangement | Price |
|---|---|---|
| 322 | 1c to $3.99, NS..... | $125.00 |
| 323 | 5c to $3.95, NS..... | 125.00 |
| 325 | 1c to $6.99, NS..... | 150.00 |
| 326 | 5c to $6.95, NS..... | 150.00 |
| 328 | 1c to $9.99, NS..... | 165.00 |
| 329 | 5c to $9.95, NS..... | 165.00 |

Dimensions: Height 17 inches, base 20 inches wide by 16½ inches deep. Equipped with No. 3 cash drawer.

#### 400 Class

| Model | Key Arrangement | Price |
|---|---|---|
| 431 | 1c to $39.99, NS..... | $175.00 |
| 432 | 5c to $39.95, NS..... | 175.00 |
| 434 | 1c to $69.99, NS..... | 187.50 |
| 435 | 5c to $69.95, NS..... | 187.50 |
| 437 | 1c to $99.99, NS..... | 200.00 |
| 438 | 5c to $99.95, NS..... | 200.00 |

## MICHIGAN

Made by the Michigan Machine Co., Detroit, Mich. Sold through dealer agencies throughout the country.

The Michigan line of cash registers comprises a number of detail adding registers, all similar in their method of operation.




### Models and Prices

(All models have cast iron cabinets, prices shown are for nickel finish. Add $5.00 extra for oxidized finish).

Model No. 1, 23 keys, 1c to $29.99 or 5c to $29.95 and NS, RA, Ch, PO. .....$65.00

Model No. 2, 15 keys, 1c to $3.99 or 5c to $3.95 and NS.....$50.00

Model No. 3, 23 keys, same as No. 1, heavy construction.....$75.00

Model No. 4, 15 keys, same as No. 2, heavy construction.....$60.00

Model No. 7, 9 keys, 1c to 59c or 5c to $1.95 and NS.....$40.00

Note: The term "Cash Register" as used in this Guide, should be understood to mean and include only such machines as are equipped with cash drawers and utilize such mechanism as has been recognized by usage and custom as of cash register construction. In other sections will be found, descriptions and analysis of combination registers (adding machines combined with cash drawers, automatic registers combined with cash drawers, etc.) The latest type of National Cash Register known as the 2000 Class is not equipped with a cash drawer and will be found under the heading "Bookkeeping Machines".

## NATIONAL

Made by National Cash Register Company, Dayton, Ohio. Sold through their own agencies in all principal cities.

Comprising over 560 stock and special models, to suit the requirements of any business. Models are divided into several different classes, according to design and method of operation. **All current models are total adders** with enameled, (usually imitation wood finish), metal cabinets.

### Explanation of Abbreviations and Model Designations

#### Keyboards

**C,** Cash-sale key
**NS,** No-sale key
**VK,** Void key
**RA,** Received-on-account key
**Ch,** Charge key
**PO.** Paid-out key

} Called the "color system"

#### Printers

**G,** Autogram device; is an arrangement of a wide detail strip allowing for the writing of memorandums opposite imprinted items.
**DSP,** Regular detail strip printer.
**WDSP,** Wide detail strip printer.
**CRP,** Customer's receipt printer. Transaction data is imprinted once.
**CSRP,** Customer's stub-receipt printer. Transaction data is imprinted twice. As a stub-receipt is issued it is perforated to provide separate portions, each showing full details of the transaction for the customer and clerk, or for other purposes.
**ISP,** Inserted slip printer. Imprints transaction data on inserted sales slip.
**CIRP,** Customer's itemized receipt printer, 1700 Class, provides a customer's printed receipt showing individual items and total.
**CD,** Check device (700 Class) for printing amounts on inserted checks.
**R&S,** Receipt and slip printer, (900 Class) provides a customer's regular or stub-receipt and is equipped with guides for the insertion of a sales slip on which it imprints the same information and in the same number of times as on the customer's receipt.
**NP,** Number printer; provides for the printing of stock numbers, words or other designations on the detail strip, customer's receipt and sales slip.
**T,** Sliding paper table (900 Class). An attachment for imprinting transaction data on a ledger sheet.
**CSF,** Consecutive slip feed (900 Class). Prints the regular detail strip data in consecutive order on a slip fed automatically from outside of the register, as items are registered.
**V,** Voucher cut-off (900 Class) cuts off a stub from voucher checks after the register has printed on the body and on the stub, and deposits stub in a locked box on the register.
**(2),** Inserted sales slip printer designed to print once on an inserted sales slip in addition to printing on the detail strip.
**(3),** Inserted sales slip printer designed to print twice on an inserted sales slip in addition to printing on the detail strip.
**(5),** Number printer the same as NP and designed to print also twice on an inserted sales slip when attached to a sales slip printer.
**XX,** Wide customer's receipt, (800 Class).

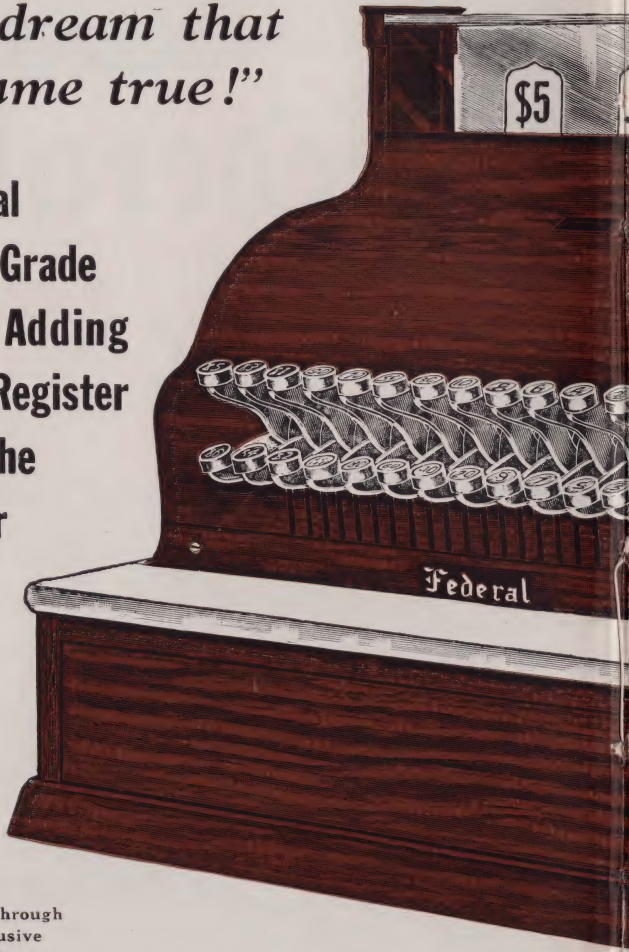
#### Counters

**-2,** Two counters, comprising a second total counter, operated from a special key on the keyboard, designed for keeping separate totals of the transactions of two clerks or of two departments.


Federal
CASH REGISTER
COMPANY
Kansas City, Missouri,
An Opportunity
for dealers and
salesmen!

*"A dream that came true!"*

**A Real High Grade Total Adding Cash Register For the Dealer**




Sold Through
Exclusive
Distributors




THE

# Federal

**Marks a New Era in the Cash Register World.**

---

**A Broad Claim**

THE

# Federal

**Is a BETTER Cash Register Than Any on the Market Today and Costs No More Than Others.**

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**WHY?**

**Turn Next Page Over and See.**

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**A Model for Every Line of Business.**

# Federal

**CASH REGISTER CO.**

**KANSAS CITY, MO.**

# *10 Reasons Why*

## *THE FEDERAL IS THE BEST CASH REGISTER MADE*

**1—Visible, Easily Read Adding Counters.**
**2—Substantial, High-Grade Mechanical Parts.**
**3—Simpler in Construction.**
**4—Better in Appearance.**
**5—Easier to Operate.**
**6—One Lock Control.**
**7—Quicker to Reset.**
**8—Clear Vision Indication.**
**9—Weighs Less.**
**10—Gives More Protection.**

When the Federal Cash Register was designed—the one thought foremost in our minds was to build the best Cash Register that human ingenuity, modern equipment, and high-grade material could combine.

A personnel of recognized cash register experts and the investment of many thousands of dollars have made the Federal what it is today.

We again wish to thank our many dealer friends for their confidence and well wishes. May we prosper together.

# Federal

## CASH REGISTER COMPANY

**KANSAS CITY, MO.**

SOME TERRITORY OPEN FOR ESTABLISHED DEALERS

## NATIONAL—continued

### Explanation of Abbreviations and Model Designations—continued

**-2-2,** Two total counters and two cash drawers, each drawer operating with its counter.

**ST,** Secret total, comprising a second main total counter, equipped with a cover and lock.

### Construction

**E,** Electrically (motor) operated.

**L,** Electric illumination of indication.

**DB,** Double bank. Denotes an arrangement of five-cent denominations on all keys of the first bank.

**N,** Narrow construction. Denotes a register having a registering capacity of one bank (one row of keys) less than a regular machine of the same model number.

**X,** "X" construction, (900 Class); a design of 900 Class registers, made without reels or reel counters.

**XX,** Wide customer's receipt, (800 Class).

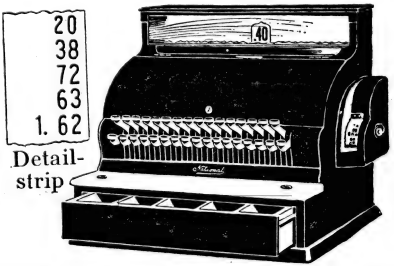
### Cash Drawers

**-C,** Counter cabinet, designed for use on the counter, providing from 2 to 6 cash drawers operated from a clerk or department key on the keyboard.

**-F,** Floor cabinet, designed to provide from 2 to 9 cash drawers operated from clerk's or department keys on the keyboard.

### 700 Class

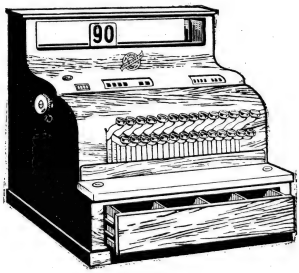
Press - down - key operated total adder, with or without detail-strip printers, equipped with resetting total counter, no-sale counter, customer counter; item counters for all special transaction keys. (Ch, PO and RA). All special transaction keys, except NS are flexible, and equipped with automatic couplers to operate in connection with any amount key.




Typical 700 Class Register with Detail-strip

### Models, Descriptions and Prices

| Models | Keys | Registration | Description | Price |
|---|---|---|---|---|
| 710 | 15 | 1c to 59c and NS, | without DSP, narrow cabinet..... | $ 75.00 |
| 711 | 15 | 5c to $1.95 and NS, | without DSP, narrow cabinet..... | 75.00 |
| 716 | 15 | 1c to 59c and NS, | with DSP, narrow cabinet..... | 125.00 |
| 717 | 15 | 5c to $1.95 and NS, | with DSP, narrow cabinet..... | 125.00 |
| 720 | 20 | 1c to $1.99 and NS, | without DSP..... | 100.00 |
| 722 | 21 | (See Chain Store Registers). | | |
| 724 | 22 | 1c to $3.99 and NS, | without DSP, regular cabinet..... | 125.00 |
| 725 | 21 | 5c to $1.95 and NS, | without DSP, regular cabinet..... | 125.00 |
| 726 | 20 | 1c to $1.99 and NS, | with DSP, regular cabinet..... | 150.00 |
| 728 | 22 | 1c to $3.99 and NS, | with DSP, regular cabinet..... | 175.00 |
| 730 | 24 | 1c to $5.99 and NS, | without DSP, regular cabinet..... | 150.00 |
| 731 | 23 | 5c to $3.95 and NS, | without DSP, regular cabinet..... | 150.00 |




*Popular Priced*

# CASH REGISTERS

**generally adaptable for all lines of Retail Business**

A high grade, popular priced press down key total adding register. Built in two sizes, Model A (small), Model B (large). Thirteen different key arrangements, including penny and five-cent styles. All metal, no wood used in the construction. Pressed steel cabinet. One lock and key control. All of the latest improvements are embodied in this register.

Designed and manufactured by skilled cash register mechanics. All materials used in its construction are carefully selected, tested and inspected. The demand for this type register is continually increasing. It is superior to any other register of its type on the market.

**Cash Register Dealers Wanted.**

*For over three years the Ohio Cash Register Co. has manufactured Parts and Supplies for all makes of cash registers. Only the best materials are used in these parts and supplies. Our special equipment enables us to produce cash register parts and supplies at a great saving to the dealer.*

We have special tools, jigs, dies and electro machinery, used only for cash register work. We also rebuild and repair used cash registers. All work done by skilled cash register mechanics. Guaranteed; and at reasonable prices. Write to our Parts and Supplies Department for further information.

***Largest dealers in Cash Register Parts and Supplies in the World***

THE OHIO CASH REGISTER CO. DAYTON, O.

## NATIONAL—continued

### 700 Class—Models, Descriptions and Prices

| Models | Keys | Registration | Description | Price |
|---|---|---|---|---|
| 736 | 24 | 1c to $5.99 and NS, or 1c to $4.99, NS and PO, with DSP | | $200.00 |
| 737 | 23 | 5c to $3.95 and NS, or 1c to $2.99, NS and PO, with DSP | | 200.00 |
| 740 | 27 | 1c to $8.99 and NS, or 1c to $7.99, NS and PO, without DSP | | 175.00 |
| 746 | 27 | 1c to $8.99 and NS, with DSP | | 225.00 |
| 747 | 27 | 5c to $7.95 and NS, with DSP | | 225.00 |
| 748 | 27 | 1c to $5.99 and NS, with DSP | | 225.00 |
| 750 | 33 | 1c to $29.99 NS, PO and RA, or color keys instead of higher amounts keys, without DSP | | 200.00 |
| 756 | 33 | 1c to $29.99, Ch, RA, PO and NS, with DSP | | 250.00 |
| 757 | 33 | 5c to $19.95, Ch, RA, PO and NS, with DSP | | 250.00 |
| 757-CD | 33 | 5c to $49.95 and NS, with DSP and CD | | 325.00 |
| 767-CD | 37 | 5c to $89.95 or $99.95 and VK, or waiters' numbers from 1 to 39 or 40 may be substituted for higher amount keys, with DSP and CD | | 400.00 |

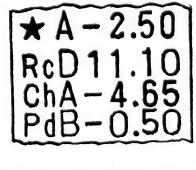
#### Extra Attachments

| | | |
|---|---|---|
| G, | Autogram device on any but 767-CD or two counter models | 25.00 |
| CD, | Check-device for printing amounts on waiters' checks; On registers (other than those regularly equipped) having less than 27 keys | 50.00 |
| | On registers (other than those regularly equipped) having more than 27 keys | 75.00 |
| -2, | Extra total adding counter, or secret total counter | 50.00 |
| -2. | Extra drawer | 35.00 |

### 800 Class




Typical 800 Class Register with Detail-strip and Customer's Receipt Printer




Push-in-key set, crank (hand or motor) operated, total adder with various designs and combinations of detail-strip printers, number printer and receipt printers, (prints front and back of narrow or wide regular or stub-receipt). Total counter can be re-set to zero; dating and sale numbering devices imprint date and consecutive sale number on customer's receipt; clerk's initial keys; divided bank providing for concurrent set-up on amount keys and special transaction keys when in the same column; hand or motor operated; wide cash drawer.

## NATIONAL—continued

### 800 Class—Models, Descriptions and Prices

| Models | Keys | Registration Description | Price |
|---|---|---|---|
| 841 | 27 | Amt. 6 Clerks, RA, Ch, PO, 1c to $9.99, CRP or DSP.. | $250.00 |
| 851 | 36 | Amt. 6 Clerks, RA, Ch, PO, 1c to $99.99, CRP or DSP.. | 300.00 |
| 842 | 27 | Amt. 6 Clerks, RA, Ch, PO, 1c to $9.99, CRP and DSP.. | 300.00 |
| 852 | 36 | Amt. 6 Clerks, RA, Ch, PO, 1c to $99.99, CRP and DSP | 350.00 |
| 862 | 42 | Amt. 9 Clerks, RA, Ch, PO, 1c to $699.99, CRP and DSP | 400.00 |
| 844 | 27 | Amt. 6 Clerks, RA, Ch, PO, 1c to $9.99, CSRP and DSP | 300.00 |
| 854 | 36 | Amt. 6 Clerks, RA, Ch, PO, 1c to $99.99, CSRP and DSP | 350.00 |
| 864 | 42 | Amt. 9 Clerks, RA, Ch, PO, 1c to $699.99, CSRP and DSP | 400.00 |
| 845 | 27 | Amt. 6 Clerks, RA, Ch, PO, 1c to $9.99, CRP, DSP and NP | 350.00 |
| 855 | 36 | Amt. 6 Clerks, RA, Ch, PO, 1c to $99.99, CRP, DSP and NP | 400.00 |
| 865 | 42 | Amt. 9 Clerks, RA, Ch, PO, 1c to $699.99, CRP, DSP and NP | 450.00 |
| 846 | Same as 841 | but with wide DSP | 275.00 |
| 847 | Same as 842 | but with wide DSP | 325.00 |
| 849 | Same as 844 | but with wide DSP | 325.00 |
| 856 | Same as 851 | but with wide DSP | 325.00 |
| 857 | Same as 852 | but with wide DSP | 375.00 |
| 859 | Same as 854 | but with wide DSP | 375.00 |
| 867 | Same as 862 | but with wide DSP | 425.00 |
| 869 | Same as 864 | but with wide DSP | 425.00 |

**Extra Attachments**

| | |
|---|---|
| Electric motor | 50.00 |
| Double bank arrangement | 50.00 |
| Extra main counter (on 862-2, 864-2, 865-2) | 50.00 |
| Counter cabinet with one or two drawers | 35.00 |
| Each additional drawer | 35.00 |
| Floor cabinet with one, two or three drawers | 105.00 |
| Each additional drawer | 35.00 |

The number printer is regular equipment on all registers having model numbers ending in 5. It has eleven positions in each column and may consist of any number of columns from 1 to 6. The straight number design has five levers as standard equipment but a sixth lever may be added on special orders. Word arrangement is built to special order.

### 900 Class

Push-in-key set, hand (crank) or motor operated, total adder. This class represents the highest development of National construction, (except possibly the new 2000 Class).

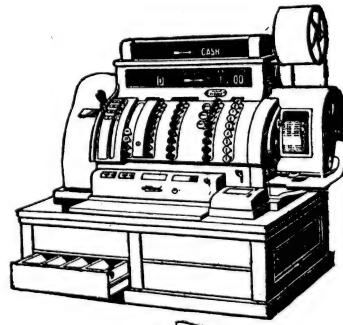
There are three distinct types of registers of this class:

1—Those without reel counters:
  (a) With 4 banks of keys.
  (b) With 5 or 7 banks of keys ("X" construction).
2—Those having 2 to 9 reel counters (mounted in a single reel).
3—Those having 8 to 18 reel counters (mounted in two reels).

**Reel Counters:** Individual counters, mounted in a reel under the left side of the cabinet, provide totals of different kinds of transactions, (such

## NATIONAL—continued
### 900 Class—continued

as Ch, PO, RA, etc.) or of the sales of each clerk. These individual counters are called "reel counters" distinguishing them from the main counter on which the total of all transactions is accumulated. The operation of the reel, to bring each counter to an accumulating position, is controlled by a hand lever on the keyboard. Only one counter on each reel can function at a time. By unlocking a covering shutter, the totals of reel counters can be read through a window as the reel is rotated by the operating lever. Resetting devices are provided for each counter.







**Printers:** Many styles of printing units may be built into this class of register, providing each, or combinations of

1—Wide detail-strip arranged so as to be visible or exposed, showing clerk and transaction designation, amount and transaction number.

2—Customer's receipt on which is printed (once for regular receipt or twice for stub receipt) clerk and transaction designation, the amount of the transaction, transaction number, date of sale and name or advertisement of user on both front and back.

3—Receipt and slip printer.

4—Number printer.
5—Autogram.

6—Consecutive slip feed, voucher-cut-off and sliding paper table are optional equipment.

All models have front, back and top indication (except double reel models, which have no top indication). Standard key arrangement is as shown on price table, but special arrangements may be obtained. All counters have resetting devices. Finish: Enameled metal, imitation oak or mahogany finish; provided with single cash drawer, but may be equipped with counter or floor multiple drawer cabinets, additional.

*It is obvious that certain special problems call for special investigation. We will be glad to help.*

# National 900 Class Models, Descriptions and Prices

| DESCRIPTION | Add to Basic Price | | No Reel 4-Banks | Reel Construction 4-Banks and Lever Bank | Reel Construction 5-Banks and Lever Bank | Reel Construction 6-Banks and Lever Bank | "X" (No reel) Construction 5-Banks | "X" (No reel) Construction 6-Banks | "X" (No reel) Construction 7-Banks |
|---|---|---|---|---|---|---|---|---|---|
| **Basic Prices for Single Drawer Registers without Reel Counters and without Printer.** | | | $250.00 | $300.00 | $350.00 | $400.00 | $275.00 | $325.00 | $375.00 |
| **Detail Strip and Customer's Receipt Printer** | $150.00 | Model<br>Price | 902(2)N<br>$400.00 | 922(2)N<br>$520.00 | 922(2)<br>$570.00 | 927(2)<br>$620.00 | 902(2)-NX<br>$425.00 | 902(2)-X<br>$475.00 | 907(2)-X<br>$525.00 |
| **Detail Strip, Customer's Receipt and Sales Slip Printer** | 175.00 | Model<br>Price | 902(2)R&S-N<br>$425.00 | 922(2)R&S-N<br>$545.00 | 922(2)R&S<br>$595.00 | 927(2)R&S<br>$645.00 | 902(2)R&S-NX<br>$450.00 | 902(2)R&S-X<br>$500.00 | 902(2)R&S-X<br>$550.00 |
| **Detail Strip and Stub, Customer's Receipt Printer** | 150.00 | Model<br>Price | 904(3)-N<br>$400.00 | 924(3)-N<br>$520.00 | 924(3)<br>$570.00 | 929(3)<br>$620.00 | 904(3)-NX<br>$425.00 | 904(3)-X<br>$475.00 | 909(3)-X<br>$525.00 |
| **Detail Strip, Stub, Customer's Receipt and Sales Slip Printer** | 175.00 | Model<br>Price | 904(3)R&S-N<br>$425.00 | 924(3)R&S-N<br>$545.00 | 924(3)R&S<br>$595.00 | 929(3)R&S<br>$645.00 | 904(3)R&S-NX<br>$450.00 | 904(3)R&S-X<br>$500.00 | 909(3)R&S-X<br>$550.00 |
| **Detail Strip, Customer's Receipt and Number Printer** | 225.00 | Model<br>Price | 902(5)-N<br>$475.00 | 922(5)-N<br>$595.00 | 922(5)<br>$645.00 | 927(5)<br>$695.00 | 902(5)-NX<br>$500.00 | 902(5)-NX<br>$550.00 | 907(5)-X<br>$600.00 |
| **Detail Strip, Stub, Customer's Receipt and Number Printer** | 225.00 | Model<br>Price | 904(5)-N<br>$475.00 | 924(5)-N<br>$595.00 | 924(5)<br>$645.00 | 929(5)<br>$695.00 | 904(5)-NX<br>$500.00 | 904(5)-X<br>$550.00 | 909(5)-X<br>$600.00 |
| **Detail Strip and Single Impression Sales Slip Printer** | 125.00 | Model<br>Price | 903(2)-N<br>$375.00 | 923(2)-N<br>$495.00 | 923(3)<br>$545.00 | 928(2)<br>$595.00 | 903(2)-NX<br>$400.00 | 903(2)-X<br>$450.00 | 908(2)-X<br>$500.00 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Detail Strip and Double Impression Sales Slip Printer** | $125.00 | Model Price | **903(3)-N** $375.00 | **923(3)-N** $495.00 | **923(3)** $545.00 | **928(3)** $595.00 | **903(3)-NX** $400.00 | **903(3)-X** $450.00 | **908(3)-X** $500.00 |
| **Detail Strip, Double Impression Sales Slip and Number Printer** | 200.00 | Model Price | **903(5)-N** $450.00 | **923(5)-N** $570.00 | **923(5)** $620.00 | **928(5)** $670.00 | **903(5)-NX** $475.00 | **903(5)-X** $525.00 | **908(5)-X** $575.00 |
| **Autogram, Detail Strip and Customer's Receipt Printer** | 125.00 | Model Price | **902-GN** $375.00 | **922-GN** $495.00 | **922-G** $545.00 | **927-G** $595.00 | **902-GNX** $400.00 | **902-GX** $450.00 | **907-GX** $500.00 |
| **Autogram, Detail Strip and Single Impression Sales Slip Printer** | 125.00 | Model Price | **903-GN** $375.00 | **923-GN** $495.00 | **923-G** $545.00 | **928-G** $595.00 | **903-GNX** $400.00 | **903-GX** $450.00 | **908-GX** $500.00 |

**Reel counters, each** ..... $35.00
**Double reel construction (counters extra)** ..... 50.00
**Motor (electric drive)** ..... 50.00
**Voucher cut-off** ..... 50.00
**Consecutive slip feed** ..... 25.00
**Sliding paper table** ..... 75.00

Counter Cabinet with 2 cash drawers .. $35.00
Each additional drawer ..... 35.00
Total limit 8 drawers.
Floor Cabinet with 3 cash drawers ... $105.00
Each additional drawer ..... 35.00
Total limit 9 drawers.

Standard Key Arrangements.

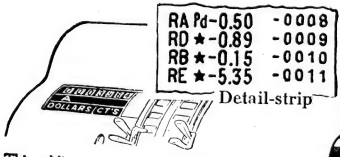
| Regular Construction | "X" Construction | Keys | Capacity |
|---|---|---|---|
| 4 banks | 5 banks | 27 | 1c to 9.99 |
| 5 banks | 6 banks | 36 | 1c to 99.99 |
| 6 banks | 7 banks | 45 | 1c to 999.99 |

On "X" models, RA, Po and Ch Keys are in one bank, initial keys in another. On reel models, lever bank contains either RA, Po and Ch keys or the initial keys. Double reel registers built only with 4 amounts and 2 lever banks, 1c to $99.99. No top indication.

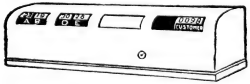
*The publishers do not sell and do not have any interest in any kind or make of machine.*

## NATIONAL—continued

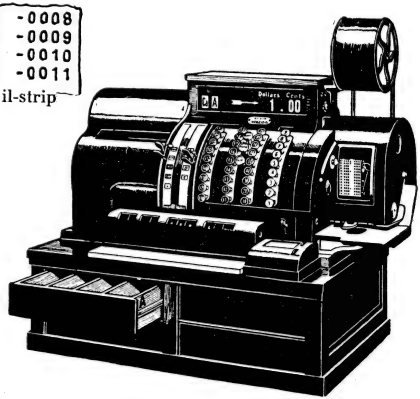
### 900 Class—continued




This adding counter, at the left side of the register, shows that Clerk A took in $39.84 during the day. Similar counters show what the other clerks took in.



These adding counters, at the front of the register just above the cash drawers, show how many customers each clerk waited on, and the total number of customers.



Double-reel Type of 900 Class Register

### 1000 Class

A push-in-key type, push-button spring operated, total adder with smooth enameled metal cabinet, imitation oak or mahogany finish. All models are equipped with the Autogram (called the daybook) device. Keyboard is flexible, providing for the restoring of any key depressed in error, by the operation of any other key in the same column; drum-type front and back indication. The energy for opening the cash drawer is accumulated by springs each time the drawer is closed.



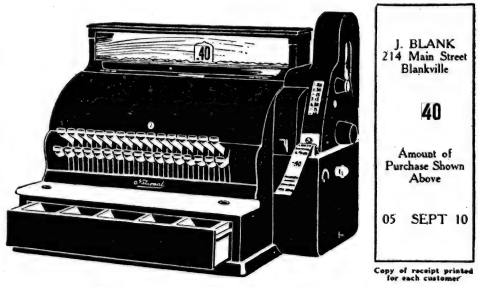

### Models Descriptions and Prices

| Model | Keys | Registration | Price |
|---|---|---|---|
| 1046-G | 32 | 1c to $9.99, NS, C, RA, Ch, PO. | $225.00 |
| 1054X-G | 41 | 1c to $99.99, NS, C, RA, Ch, PO. | 250.00 |
| 1066-G | 54 | 1c to $99.99, 9 Clerks, 9 spec. keys ..... | 275.00 |
| 1068-G | 50 | 1c to $99.99, 9 Depts. NS, C, RA, Ch, PO.... | 275.00 |

## NATIONAL—continued

### 1100 Class

Press - down - key, crank or motor operated, total adder, similar to the 700 Class in key arrangement, except that in addition to producing a detail-strip, it issues a customer's receipt showing the total amount, consecutive number and date of the transaction, and the name or advertisement of the user.




To register an amount, keys are depressed in the usual way as on other press-down key type registers, but the transaction is not registered and the drawer does not open until the crank or motor is operated. An optional feature to substitute the customer's receipt, is a device for the insertion of a sales slip or restaurant check, on which the transaction data is imprinted.

All models are equipped with customer's counter, lid counter and have enameled metal cabinet finished in oak or mahogany.

### Models, Descriptions and Prices

| Model | Keys | Registration | Price |
|---|---|---|---|
| 1116 | 15 | 1c to 59c NS | $150.00 |
| 1117 | 15 | 5c to $1.95, NS | 150.00 |
| 1122 | | (See Chain Store Registers). | |
| 1128 | 22 | 1c to $3.99 NS | 200.00 |
| 1136 | 24 | 1c to $4.99 NS, PO, or 1c to $5.99 NS | 225.00 |
| 1137 | 23 | 5c to $2.95 NS, PO, or 5c to $3.95 NS | 225.00 |
| 1146 | 27 | 1c to $7.99 NS, PO, or 1c to $8.99 NS | 250.00 |
| 1147 | 27 | 5c to $6.95 NS, PO, or 1c to $7.99 NS | 250.00 |
| 1156 | 33 | 1c to $29.99 NS, PO, Ch, RA | 275.00 |

**Extra Attachments**

| | |
|---|---|
| Electric motor | 50.00 |
| Extra counter on registers having 22 keys or more | 50.00 |
| Secret total on registers having 22 keys or more | 50.00 |
| Extra drawer (must have extra counter) | 35.00 |

### 1200 Class

See Ticket Issuing Registers.

### 1700 Class

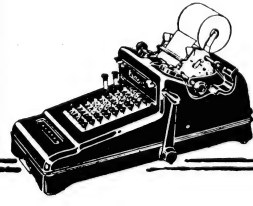
Press-down key, crank or motor operated, total adder, providing an itemized and totalled customer's receipt and a detail-strip. Designed for use in retail stores in registering, adding and furnishing a total of different items of a transaction. All models have customer counter and lid counter, but do not have "No Sale" or special counters or special keys. Made with one counter and one cash drawer only.




**Our trained organization** and extensive facilities recommend us as your logical Pacific Coast Representative.

We solicit agency propositions for new machines or devices, particularly cash registers and adding machines.

We buy and sell cash registers and adding machines for spot cash in any quantity—anywhere. Tell us by wire or letter what you have or what you want.



**J·R·WALLER**

Established 25 Years

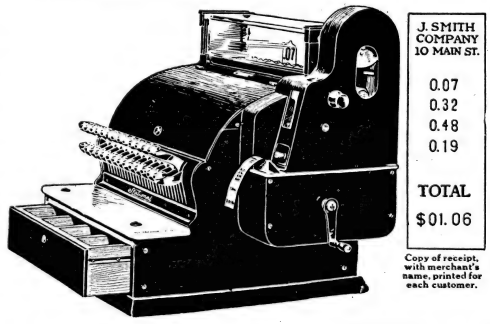
Reference: BRADSTREET or DUN

353 So. Los Angeles St.

LOS ANGELES, CALIFORNIA

## NATIONAL—continued

### 1700 Class—continued



Copy of receipt, with merchant's name, printed for each customer.

To operate, the amount of the individual items are registered on the keys, which immediately return to normal position. The cash drawer does not open until the total is taken by the operation of the crank or motor. The detail strip shows totals of transactions—not the record of the individual items. Indicators show amount of individual items as they are registered—the registration of a second item, destroying the registration of the preceding one, etc. When the total is taken all indication is eliminated. The indication of total amount of transaction does not appear.

### Models, Descriptions and Prices

| Model | Keys | Registration | Price | Model | Keys | Registration | Price |
|---|---|---|---|---|---|---|---|
| 1722 | | (See Chain Store Registers) | | 1746 | 27 | 1c to $9.99 | $325.00 |
| 1728 | 21 | 1c to $3.99 | $275.00 | 1747 | 27 | 5c to $8.95 | 325.00 |
| 1736 | 23 | 1c to $5.99 | 300.00 | 1756 | 33 | 1c to $69.99 | 350.00 |
| 1737 | 22 | 5c to $3.95 | 300.00 | 1757 | 33 | 5c to $59.99 | 350.00 |
| Extra for electric motor | | | | | | | 50.00 |

### Chain Store Registers

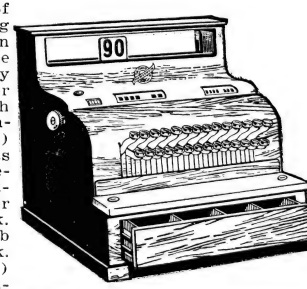
Several models of press-down-key registers have tied-up counters and are otherwise equipped for chain store use. They are sold only in lots of ten or more.

### Models, Descriptions and Prices

| Model | Keys | Registration | Description | Price Hand | Price Electric |
|---|---|---|---|---|---|
| 722 | 21 | 1c to $2.99 and NS | | $ 90.00 | ..... |
| 1122 | 21 | 1c to $2.99 and NS | | 150.00 | $175.00 |
| 1142 | 27 | 1c to $8.99 and NS | | 200.00 | 225.00 |
| 1142 | 28 | 1c to $5.99, PO, NS and 4 Clerks' keys. | Initial keys must be pressed before amount can be registered: counters working in connection with clerks' keys show number of sales made by each clerk during the day. | 200.00 | 225.00 |
| 1722 | 20 | 1c to $2.99 | | 225.00 | 250.00 |

## OHIO

Made by The Ohio Cash Register Company, Dayton, Ohio. Sold through specially appointed dealers and agents.




Made in two models of several sizes of press-down key-operated, total adding registers, without printers. Construction is all steel, including cash drawer; one piece enameled cabinet, oak or mahogany finish. Total adding counter, customer counter and no-sale counter, provided with reset devices, situated to be read conveniently through apertures (windows) in front of cabinet. A shutter prevents reading by unauthorized persons. Resetting of all counters, operation of shutter and positive locking of cash drawer (if desired), is controlled by a single lock. Indication follows the usual projected tab design, glass enclosed front and back. Shield (called by the trade "the flash") covers indication until registering operation has been completed, assuring complete and correct registration.

Model A, narrow size, (13⅛ inches wide, 17⅛ inches high, 17 inches deep), has two bill compartments with weights and five coin compartments in cash drawer.

Model B, standard size (17⅜ inches wide, 17⅛ inches high, 17 inches deep), has three bill compartments with weights and six coin compartments in cash drawer.

### Models, Descriptions and Prices

Note: First two figures of model number denote number of amount registering keys. Last figure denotes key arrangement: if 5, the register has 5c key arrangement, if 9, the register has 1c key arrangement. The intervening figure or figures, denote the highest dollar registering key. "S" following model number, denotes special key equipment.

| Model | Key | Registration | Price |
|---|---|---|---|
| A-2025 | 21 | 5c to $2.95 and NS | $100.00 |
| A-2029 | 21 | 1c to $2.99 and NS | 100.00 |
| A-2055 | 21 | 5c to $5.95 and NS | 100.00 |
| A-2355 | 24 | 5c to $5.95 and NS | 115.00 |
| A-2359 | 24 | 1c to $5.99 and NS | 115.00 |
| B-2359 | 24 | 1c to $5.99 and NS | 115.00 |
| B-2395 | 24 | 5c to $9.95 and NS | 115.00 |
| B-2795 | 28 | 5c to $9.95 and NS | 135.00 |
| B-2799 | 28 | 1c to $9.99 and NS | 135.00 |
| B-3095-S | 31 | 5c to $9.95, NS, RA, PO, Ch | 150.00 |
| B-3099-S | 31 | 1c to $9.99, NS, RA, PO, Ch | 150.00 |
| B-30395 | 31 | 5c to $39.99 and NS | 150.00 |

## ROOKE AUTOMATIC REGISTER

Made by the Rooke Automatic Register Company, Providence, Rhode Island. Distributed on a lease basis.

A portable fare register for cash and metal ticket coins. Principally used by street railway and automobile bus conductors. Furnished to accommodate any one denomination of coin. The register is held in the hand of the conductor. When the passenger inserts the proper coin in a slot, it is automatically registered on a cyclometer unit counter, and drops the coin into the palm of the conductor's hand.

All registers are leased under contract and are not sold.

## REMINGTON
## (Model A)

Made by the Remington Cash Register Company, Incorporated. Subsidiary of Remington Arms Co., Incorporated, Ilion, New York. Sold through their own salesmen, operating from branches in all principal cities.

Comprising a line of press down key total adding registers equipped with detail strip printers: Provided with one or two total adding counters from which the total is printed on the detail strip instead of being read from number wheels.



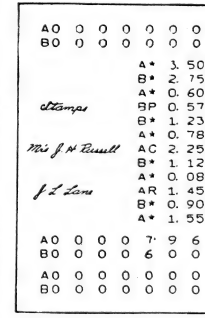

A single lock arrangement controls the protective features of the machine. The detail strip differs from preceding cash register practice in that it is positioned in the center of the register cabinet above the keyboard and is autographic. The present line is known as Model A.

### Specifications

**Keyboard:** All sizes have flexible keyboards, designed so that by the use of only one finger any combination of keys can be operated by depressing part way, one key after another and finishing the registration by depressing the last key the full distance, which carries with it the other keys which have been part way depressed. It eliminates the difficulty of making large span registrations when several keys in different parts of the keyboard must be depressed for one transaction. Special keys are provided for Cash, Charge, Received on Account, Paid Out and No Sale transactions, the last four as a combination being known as color keys. These special keys can be arranged to add or to throw out (non-add) the amounts registered in connection with them. Although the key arrange-

## REMINGTON—continued

ment is fixed on some sizes other sizes provide for any variation to suit the needs of the user. (Some sizes are equipped with an operating key which must be depressed before an amount can be set up on the keyboard.)




**Detail strip:** The wide autographic detail strip can be removed and refils inserted by authorized persons without providing access to other locked controls of the register. Autographic detail strips provide for the writing of memorandums opposite the printed items. The nature of the transaction and the clerk's initial, according to the arrangement of the machine, are printed on the detail strip.

**Total adding counters:** All sizes have one and some are provided with two total adding counters which print the total of the accumulated amount. The clerk keys or color keys control the adding counters and various combinations can be made (such as: Cash transactions to add in one counter and Charge transactions in a second counter, etc.). All counters have resetting devices. Special transaction counters provide totals of the number of transactions in individual No Sale, Paid Out, Received On Account, Charge transactions, also the number of times each counter is reset to zero.

**Printer Styles:** The total adding counters serve also as printers. The number wheels have type instead of readable characters. All imprinting is done through narrow ribbons, similar to typewriter ribbons. Impressions are made in one color.

**Indication:** In connection with the amount of the transaction, many sizes provide for an indication of the nature of the transaction (Cash, Charge, Received On Account, or Paid Out) and the clerk's initial. The construction of the indicator arrangement is such that a feature of these registers is the unusually large size of the indicator characters.

**Lock Control,** situated on the right side of the register provides a control by a single lock and key (a) to lock the register, (b) to enforce the closing of the drawer before registering a new transaction, (c) to provide taking of totals on counters, (d) to reset counters. Each register manufactured has a different tumbler lock and key; master keys are provided when several registers are used in the same establishment.

**Cabinet:** Pressed steel, enameled, imitation wood finish, of one piece construction.

## Models and Prices

The first figure of the model number denotes the size number of the register; the second figure of the model number denotes the style of printer:

3 indicates a wide detail (autographic), 4½ inch printer.
2 indicates a narrow detail strip printer.
0 indicates no printer.

The third figure of the model number denotes the key arrangement:
If an odd number, the register has two counters;
If an even number, the register has one counter.
If 0, the register has no special keys (except the No. 4 size).
X after the model number denotes 5c key arrangement (except No. 1 size).

## REMINGTON—continued

### Models and Prices—continued

—2 after the model number denotes 2 cash drawers, one mounted above the other.

In the descriptions of key arrangement, NS denotes No Sale key; Op denotes operating key; PO denotes Paid Out key; Ch denotes Charge Sale key; RA denotes Received On Account; C denotes Cash Sale key.

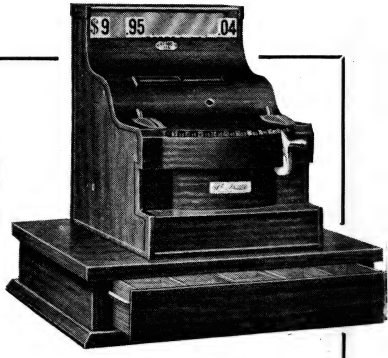
| Size | Style | Keys | Key Arrangement | Price |
|---|---|---|---|---|
| 1 | 130 | 17 | 1c to 79c, NS | $150.00 |
| 1 | 132 | 17 | 5c to $1.95, NS | 150.00 |
| 3 | 330 | 24 | 1c to $3.99, Op, PO, NS | 200.00 |
| 3 | 330-X | 24 | 5c to $3.95, Op, PO, NS | 200.00 |
| 3 | 331 | 24 | 1c to $3.99, NS, 2 Clerks Keys | 250.00 |
| 3 | 331-X | 24 | 5c to $3.95, NS, 2 Clerks Keys | 250.00 |
| 3 | 331¼ | 24 | 1c to $3.99, NS, 2 Dept. Keys | 250.00 |
| 3 | 331¼-X | 24 | 5c to $3.95, NS, 2 Dept. Keys | 250.00 |
| 3 | 331—2 | 24 | 1c to $3.95, NS, 2 Clerks Keys, 2 Cash Drawers | 285.00 |
| 3 | 331-X—2 | 24 | 5c to $3.95, NS, 2 Cash Drawers, 2 Clerks Keys | 285.00 |
| 3 | 332 | 32 | 1c to $5.99, Op, PO, NS, Spec | 250.00 |
| 3 | 333 | 32 | 1c to $5.99, NS, PO, 2 Dept. Keys | 300.00 |
| 3 | 334 | 32 | 1c to $9.99, Op, PO, NS, Ch, RA | 260.00 |
| 3 | 334-X | 32 | 5c to $9.95, Op, PO, NS, Ch, RA | 260.00 |
| 3 | 334¼ | 30 | 1c to $9.99, C, NS, PO | 250.00 |
| 3 | 334¼-X | 30 | 5c to $9.95, C, NS, PO | 250.00 |
| 3 | 335 | 32 | 1c to $8.99, NS, PO, CH, RA, 2 Clerks Keys | 310.00 |
| 3 | 335-X | 32 | 5c to $8.95, NS, PO, CH, RA, 2 Clerks Keys | 310.00 |
| 3 | 335—2 | 32 | 1c to $8.99, Ch, RA, PO, NS, 2 Clerks Keys, 2 Cash Drawers | 345.00 |
| 3 | 335-X—2 | 32 | 5c to $8.95, Ch, RA, PO, NS, 2 Clerks Keys, 2 Cash Drawers | 345.00 |
| 3 | 336 | 32 | 1c to $9.99, NS, 4 Clerks Keys | 260.00 |
| 3 | 336-X | 32 | 5c to $9.95, NS, 4 Clerks Keys | 260.00 |
| 3 | 338 | 32 | 1c to $8.99, Ch, RA, PO, NS, 2 Clerks Keys | 260.00 |
| 3 | 338-X | 32 | 5c to $8.95, Ch, RA, PO, NS, 2 Clerks Keys | 260.00 |
| 3 | 339 | 32 | 1c to $9.99, NS, C, PO, Ch, RA | 310.00 |
| 3 | 339-X | 32 | 5c to $9.95, NS, C, PO, Ch, RA | 310.00 |
| 4 | 430 | 36 | 1c to $49.99, Op, PO, NS, Ch, RA | 325.00 |
| 4 | 430-X | 36 | 5c to $49.95, Op, PO, NS, Ch, RA | 325.00 |
| 4 | 431 | 36 | 1c to $49.99, NS, C, PO, Ch, RA | 375.00 |
| 4 | 431-X | 36 | 5c to $49.95, NS, C, PO, Ch, RA | 375.00 |
| 4 | 432 | 41 | 1c to $49.99, NS, Op, PO, Ch, RA | 375.00 |
| 4 | 434 | 41 | 1c to $99.99, NS, Op, PO, Ch, RA | 375.00 |
| 4 | 434-X | 41 | 5c to $99.95, NS, Op, PO, Ch, RA | 375.00 |
| 4 | 435 | 41 | 1c to $89.99, NS, PO, Ch, RA, 2 Clerks Keys | 425.00 |
| 4 | 435-X | 41 | 5c to $89.95, NS, PO, Ch, RA, 2 Clerks Keys | 425.00 |
| 4 | 436 | 41 | 1c to $69.99, NS, PO, CH, RA, 4 Clerks Keys | 375.00 |
| 4 | 436-X | 41 | 5c to $69.95, NS, PO, Ch, RA, 4 Clerks Keys | 375.00 |
| 4 | 437 | 41 | 1c to $69.99, NS, PO, Ch, RA, C, 3 Clerks Keys | 425.00 |
| 4 | 437-X | 41 | 5c to $69.95, NS, PO, Ch, RA, C, 3 Clerks Keys | 425.00 |
| 4 | 438 | 41 | 1c to $69.99, NS, PO, 6 Clerks Keys | 375.00 |
| 4 | 438-X | 41 | 5c to $69.95, NS, PO, 6 Clerks Keys | 375.00 |
| 4 | 439 | 41 | 1c to $99.99, NS, PO, Ch, RA, C | 425.00 |
| 4 | 439-X | 41 | 5c to $99.95, NS, PO, Ch, RA, C | 425.00 |

The New Improved

# ST. LOUIS

## CASH REGISTERS

***All total adders absolutely reliable and durable***




14 different models, suitable for all lines of business.

***They are easy to operate, attractive in appearance, and lower in price, all of which reduce sales resistance.***

---

*This Company is offering an exceptionally attractive new commission contract to reliable salesmen and dealers who are "go-getters".*

*Cash registers are a necessity. The demand has already been created, but merchants are tired of paying excessive prices for cash registers.*

*Our lower prices and easy monthly payment plan pave the way for capable salesmen to make big money. Correspondence solicited.*

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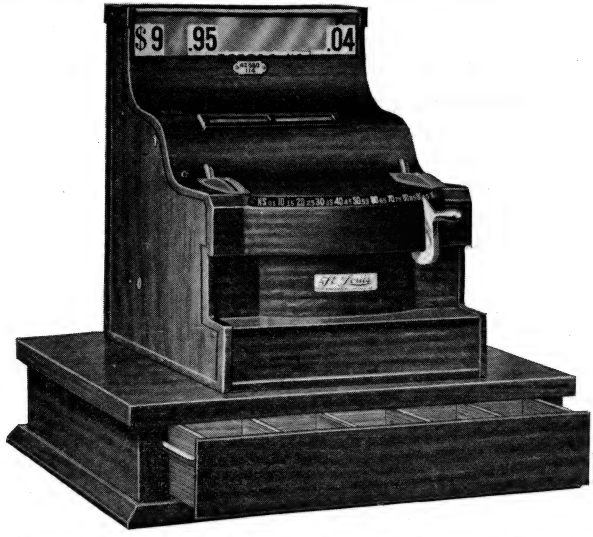
**ST. LOUIS CASH REGISTER CO., Inc.**

***Manufacturers***

**ST. LOUIS, MO.**

## ST. LOUIS

Made by St. Louis Cash Register Company, Incorporated, St. Louis, Missouri. Sold by specially appointed dealers and agents.




An extensive line of index type total adding registers, without printers. The keyboard arrangement and principle of operation is distinctive. The main keyboard consists of a metal strip on the curved front of the cabinet, on which registering amounts up to 95c are indexed, at uniform distances, in multiples of 5c or 10c. A pointer-lever connected with the interior mechanism is positioned so as to permit being moved laterally by the operator, to any amount position on the keyboard. Friction points within the register provide for retaining the pointer where placed to indicate the amount set-up.

One or two (according to capacity of register) auxiliary lever-set keyboards mounted above and at each end of the main keyboard, provide for registering, amounts of dollars, and cents below 5c or 10c, simultaneously with amount set up on main keyboard.

After amount to be registered has been set up (on one, two or three keyboards) the pointer-lever on main keyboard is pressed down, registering and indicating the amount of sale and opening the cash drawer. Amount of set-up is retained.

All models are equipped with a non-resetting total adding cash counter, located on the face of the cabinet under a glass panel, and is obscured from view from unauthorized persons by a shutter controlled by a lock and key. A tally counter shows the number of times the adding counter has been exposed to view. A mechanism lock controls all functions of the register.

## ST. LOUIS—continued

Cabinets are steel, smooth enameled oak or mahogany finish; cash drawers and cash drawer cabinets are of wood. Cash drawers are of three sizes:

Small: Having 5 coin and 1 bill compartment.

Medium: Having 6 coin and 2 bill compartments.

Large: Having 7 coin and 4 bill compartments.

Indication is of the projected tab design, glass enclosed at top, front and rear.

### Models, Descriptions and Prices

**(All prices F. O. B. St. Louis)**

Note: On the following models, the main keyboard registers 5c to 95c in 5c multiples; right side auxiliary keyboard registers 1c to 4c; left side auxiliary keyboard registers dollars.

| Model | Description | Price |
|---|---|---|
| 102 | 1c to $2.99, medium drawer | $100.00 |
| 104 | 1c to $5.99, medium drawer | 110.00 |
| 104X | 1c to $9.99, medium drawer | 120.00 |
| 108 | 1c to $5.99, medium drawer, extended base | 120.00 |
| 110 | 1c to $5.99, large drawer, extended base | 125.00 |
| 112 | 1c to $9.99, medium drawer, extended base | 130.00 |
| 114 | 1c to $9.99, large drawer, extended base | 135.00 |

Note: On the following models the main keyboard registers 10c to 90c in 10c multiples; right side auxiliary keyboard registers 1c to 9c; left side auxiliary keyboard registers dollars.

| Model | Description | Price |
|---|---|---|
| 204 | 1c to $5.99, medium drawer | $110.00 |
| **Model** | **Description** | **Price** |
| 204X | 1c to $9.99, medium drawer | $120.00 |
| 208 | 1c to $5.99, medium drawer, extended base | 120.00 |
| 210 | 1c to $5.99, large drawer, extended base | 125.00 |
| 212 | 1c to $9.99, medium drawer, extended base | 130.00 |
| 214 | 1c to $9.99, large drawer, extended base | 135.00 |

Note: The following models do not register penny sales:

| Model | Description | Price |
|---|---|---|
| 38 | 5c to $1.95, small drawer | $ 70.00 |
| 105 | 5c to $5.95, medium drawer | 100.00 |
| 113 | 5c to $9.95, medium drawer, extended base | 120.00 |
| 117 | 5c to $29.95, large drawer, extended base | 135.00 |
| 119 | 5c to $59.95, large drawer, extended base | 140.00 |
| 121 | 5c to $99.95, large drawer, extended base | 145.00 |

## ANKER

Made in Germany and sold in the United States by the Anker Cash Register Corporation, 110 East Twenty-Third Street, New York City.

Comprising a line of press-in key set, crank operated, total adding registers with drum type indication; detail strip and customers' receipt or slip printers, equipped with date and consecutive number transaction printer; also without printer. Made in four, five and six bank models with capacities of 1c to $9.99, 1c to $99.99, and 1c to $999.99, with from six to nine initials and three special keys; also without initial or special keys. Cabinets are of pressed steel, hammered nickel finish.

Prices range from $120.00 to $190.00; electrically operated $40.00 additional.

Cash drawers of models that have been offered for sale have been arranged for German paper money sizes and were not adapted to the size of American bills. The printers also carry the German designation for month, such as: "Dez" for Dec., etc.

# Check Certifiers

## JOSLIN

Made by the A. D. Joslin Manufacturing Company, 223 West Erie Street, Chicago, Illinois. Sold direct to banks, trust companies and other financial institutions.




A device comprising a printing head equipped with a bronze die to print a form of acceptance across the face of checks. The entire mechanism is contained in the head. Impressions are made by percussion. The die with which each machine is equipped, is made in any style to suit the user but to prevent forgery is made only on authority of bank officials. It is equipped with changeable date wheels, showing the set-up of the date visibly, and if desired, may also show, in connection with the imprint, a consecutive serial number. Duplicate and triplicate numbering devices may be furnished if desired.

Impressions are made through a ribbon which moves automatically to present a fresh surface each time an impression is made.

A lever lock prevents the operation of the device while the teller or cashier is away, thus providing for the accounting of every number.

Checks are inserted face up and impressions may be made at any position desired. The impression appears on both the face and back of the check to prevent alteration; the impression on the back showing in the reverse.

### Models and Prices

Without consecutive numbering device.....$ 57.50
With consecutive duplicate or triplicate numbering device..... 125.00

(Descriptions of Check Certifiers continued on page 168)

# Check Endorsers

The dominant thought in the designing of check endorsers for use in banks and the larger business houses, has been to get away from the illegible, non-readable endorsements as made by the old hand rubber stamp method and its necessarily slow and noisy operation.

Every one of the millions of checks handled by banks and depositors every day, must be endorsed with either the deposit endorsement or the transit or clearing house endorsement.

In banks, particularly, it is highly important and desirable to have all checks endorsed as speedily as possible with the positive assurance that no check shall be skipped and sent out only to be returned from, perhaps, a distant collection point for want of endorsement. It is now possible to include incoming checks right up to the last minute in both clearing house and transit lists, immediately after they have been added and listed.




Facsimile Endorsement

## AUTOMAT

Made by the Mail-O-Meter Company. General offices and factory, 3455 East Jefferson Avenue, Detroit, Michigan. Sold by their own sales force through branch offices located in principal cities.

A motor driven device designed for use beside an adding machine, handling all checks from single checks of light paper to the largest vouchers with papers attached. Checks are inserted, face downward, into a feeding guide where they are instantly gripped by the feed rollers. The die rotates only when checks are inserted. As each check is fed, it automatically trips a release, causing the die to revolve and make the impression, after which checks pass into a receiving hopper, and are stacked in proper order. Checks may be fed continuously at the rate of approximately 170 per minute. The endorsement may be placed on any desired space on the back of the check.

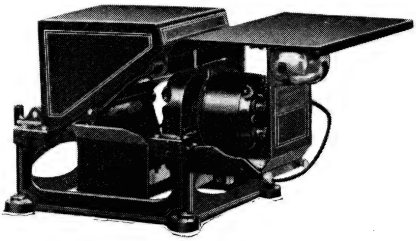
The die is rubber, mounted on a cylinder and is removable and interchangeable. The insertion of different dies extend the use of the device to other kinds of work, such as for time stamping orders and documents, or paid-stamping checks, invoices, etc.

Price ..... $200.00

## CUMMINS

Made by Cummins Perforator Company, Chicago, Illinois.

A motor driven, single feed endorser, recently put on the market. It is a light weight machine, designed for use on a stand, preferably located adjoining the adding machine on which checks are listed.



Checks are inserted between guides extending from a shelf at the front of the machine. A straightening device straightens any checks that may be dropped in on a slant so that the endorsement is always parallel to the body of the check.

Impressions are made by means of a metal die which contains movable type for dates and batch numbers. The type cannot be removed from the die, but is so designed that a date may be easily and quickly changed by removing the die.

After the impression has been made, checks are deposited in a tray beneath the device in an orderly pile, in the same sequence in which they were fed.

The ink feed is automatic from a reservoir. When a check is inserted, it trips the die bringing it in contact with the printing roll. When the machine is running idle, the die does not trip, thereby avoiding the possibility of offsetting, smearing or blurring.

Equipped with ball bearings throughout. Finish, black enamel. Equipment includes a standing height stand.

### Models and Prices

Single feed model as above described, electrically operated, complete with stand. Price.....$190.00

## INTERNATIONAL

Made by the International Postal Supply Company, of New York, 634 Prospect Place, Brooklyn, New York. Sold direct and through their own representatives.

There are two distinct types of International check endorsing machines, both electrically driven.

Automatic quantity feed machines are high speed, portable devices, separating and feeding checks held at the feeder guide by the hand of the operator.

The single feed model, as its name implies, endorses checks that are fed, singly, into it.

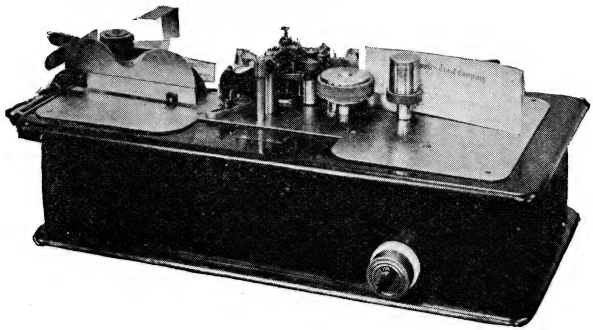
**Model K, automatic quantity feed,** is motor driven. The mechanism consists of a chain of gears which drive a series of feeder rolls timed with the impression wheels. A tripping device prevents the rotation of

## INTERNATIONAL—continued

the die when a check is not fed, avoiding the possibility of offsetting, smutting or blurring. In operation, the checks are held in a pile in the hands of the operator, against a rotating friction feeder roll. A spring arm exerts a pressure on the pile causing but one check to feed through at a time. Separates, endorses and stacks 250 checks per minute. After the endorsement has been made the checks are deposited in a stacker in the same sequence as fed.

The dies are hand engraved on hard steel and interchangeable. Type for day, month and year are also steel and removable. Type characters to designate batch run may also be supplied. Equipped with 1/12 H. P. motor, self contained, any voltage or current. Mounted on a cabinet base measuring 28"x15", enclosing motor and gears.

Price: Golden oak cabinet.....$350.00
Mahogany finish cabinet..... 360.00
Counter, extra ..... 25.00



Model K, Quantity Feed

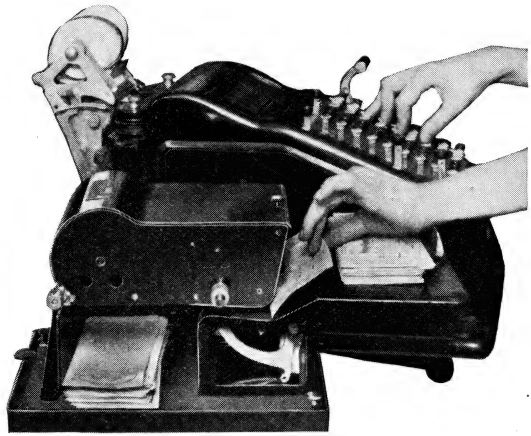
**Model A, or Midget, automatic quantity feed,** is mounted on an iron base with rubber feet and has a metal enclosed case of nickel finish. It is smaller in size and capacity (150 checks per minute) and differs in designs from the Model K principally in that checks are fed face down instead of on their edges. It may be equipped with an all steel hand engraved die, or an electrotype die. Matt nickeled iron base, nickeled metal top and sides, 24"x14", 1/30 H. P. motor, self contained, any voltage or current.

Price: With steel die, including counter.....$250.00
With electrotype die, including counter..... 235.00

*The DIGEST starts where advertisements end.*

## INTERNATIONAL—continued

**"Junior" single feed model,** is motor driven and designed for use on a stand beside an adding machine. As each check is listed and added on the adding machine, it is inserted in a guide in the endorser, which makes an endorsement imprint the same as the high speed machine. Endorsed checks are deposited in the base of the device and may be removed either from the open side or by lifting the upper part of the machine, which is hinged to the base. The automatic inker may be re-filled by lifting a cover.



Junior, Single Feed Model

Endorsements are printed across the check and any clear space on the check may be selected by the operator for the impression. It endorses voucher checks without mutilation. Dates are changed without removing the dies. The entire upper part of the device lifts up providing access to the die, without removing. Dies are readily changeable if more than one is required.

Price ..... $155.00
Special adjustable stand..... 15.00

**Note:** The above prices include dies having not over 100 characters on the automatic quantity feed models, and 75 characters on the single feed model. For additional characters on dies, an extra charge will be made. All prices are F. O. B. factory.

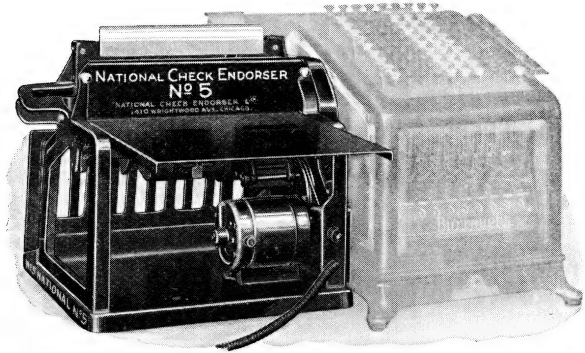
## NATIONAL

Made by the Morkrum Company, general office and factory, 1410 Wrightwood Avenue, Chicago, Illinois. Sold direct and through their own sales force.

Designed for use in banks and larger business houses to endorse quantities of checks accurately and speedily. Its construction provides for clear and full endorsement of every check, regardless of size or condition. Voucher checks or those with papers attached are safely handled.

Its design embodies a removable die block with interchangeable dates and if desired, other numbers or codes for use with the batch system of

## NATIONAL—continued




handling runs of checks in banks. It prints from ink, distributed to the die by rollers. It is motor driven, the motor stopping and starting as each check is handled. The motor mechanism is equipped with belt drive and spring tension.

Under the usual operating conditions, the device is mounted on a stand so as to be the same height and be placed beside the adding machine on which checks are added and listed. The checks are fed singly in the top of the machine and as the hand of the operator is withdrawn, a starter plate functions automatically to set the stamping mechanism in motion. The check is gripped, stamped, ejected and arranged in a pile on a tray in back of the machine.

### Models and Prices

Model No. 5, electrically operated, F. O. B. Chicago.....$185.00

(Continued from page 163)

## ROBERTS CHECK CERTIFIER

Made by the Roberts Numbering Machine Company. General offices and factory, 694-710 Jamaica Avenue, Brooklyn, New York. Sold through stationers and dealers and by their own representatives.

An adaptation of the Roberts Hand Numbering Machine to imprint a consecutive number, date and a form of certification on checks or other documents. It has the regular automatic actions of a numbering machine for consecutive, duplicate and repeat and is equipped with a mounting and gauges to provide uniform positioning of the imprint on the check.

Date and number are imprinted from steel wheels; the form of certification is imprinted from a flat die. Impressions are made with ink, fed to the type by a felt pad.

The die may have any wording required, for which a charge in addition to the prices shown below, will be made:

4 Wheel numbering capacity. Price.....$65.00
5 Wheel numbering capacity. Price..... 70.00
6 Wheel numbering capacity. Price..... 75.00

# Check Protecting Devices

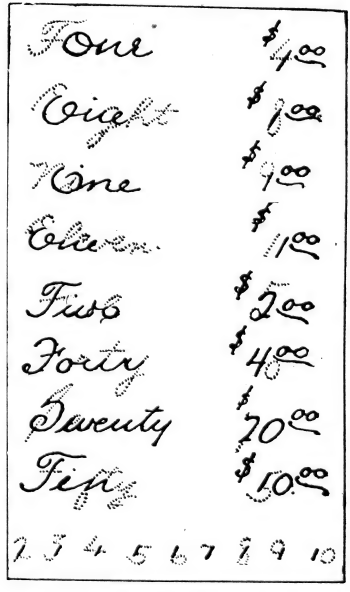
The selection of a check writer or protector, takes into consideration the kind of work for which it is intended. Some devices are more adapted for some classes of work than others.

The following represent the main differences in check writers or protectors now on the market:

1—Those imprinting the amount in words.
2—Those imprinting the amount in numerals.
3—Those imprinting the amount in both words and numerals.
4—Those writing the whole amount at one time.
5—Those writing one word or one numeral at a time.
6—Those repeating the amount on subsequent checks without resetting.

Practically all makers provide for macerating or breaking the surface of the check, and the forcing of acid proof ink into the fibre of the paper. While the method differs considerably, as between the different makers, all seem to have attained a high degree of protection in making the impressions permanent and unchangeable.

The various additional safeguards incorporated in the different machines, such as protecting the name of the payee, as well as the amount, etc., are fully described for each machine.




Methods of Raising Written Words and Figures on Unprotected Checks

CHECK-WRITER CO. INC.
111 NASSAU ST. N.Y.C.
"PROTEX" ALL MAKES ON HAND
REBUILTS ARE THE BEST
SEND FOR OUR NEW PRICE LIST & DEALERS DISCOUNTS
HEADQUARTERS SALES - EXCHANGES - COVERS - INK - REBUILTS - REPAIRS - TYPE - AND PARTS
DISTRIBUTORS WANTED

## COMPARISON OF CHECK WRITERS AND PROTECTORS

(Including only machines that are factors in the market.)

| | |
|---|---|
| **Kind of Characters** | |
| Exact amount in words: | **Todd,** (Exactly, Double-Quick, Thoroughbred, and Peerless Senior and Junior models).<br>**Safeguard,**<br>**Defiance,** (Model No. 1) |
| Exact amount in numerals: | **Checkometer,**<br>**F & E,**<br>**Todd,** (Beebe, New Safety and International models). |
| Exact amount in words or numerals: | **Todd,** (Thoroughbred model) |
| Exact amount in words and numerals: | **Todd,** (Thoroughbred model)<br>**Defiance,** (All but Model No. 1)<br>**Sentinel** |
| **How Written** | |
| One character at a time: | **Todd,** (all models)<br>**Sentinel,**<br>**Safeguard** |
| Whole amount in one operation: | **Defiance,** (all models)<br>**F & E,**<br>**Checkometer** |
| Straight line imprint: | **Todd,** (all models)<br>**Checkometer,**<br>**F & E,**<br>**Defiance** |
| Words set diagonally: | **Sentinel,**<br>**Safeguard** |
| **Degree of Protection** | |
| Protects amount: | **All makes; all models** |
| Protects payee's name: | **Safeguard,**<br>**Checkometer** |
| **Kind of Protection** | |
| Macerates: | **Todd,** (Peerless, Senior and Junior models, New-safety and Beebe models)<br>**Safeguard,**<br>**F & E,**<br>**Sentinel,** |
| Shreds: | **Todd,** (Exactly, Double-Quick and Thoroughbred models) |
| Prints: | **Defiance,** (all models) |
| Perforates and embosses: | **Checkometer,** (pin point background design) |
| **Inking of Type** | |
| Each character as set up: | **Todd,** (all models)<br>**Safeguard,**<br>**Sentinel** |

## COMPARISON OF CHECK WRITERS AND PROTECTORS—continued

| | |
|---|---|
| Whole amount: | **Defiance, Checkometer, F & E** |
| For repeated amounts: | **Checkometer, F & E, Defiance,** (Model No. 1) |
| Visibility of Set-up | |
| Single characters before printing: | **All makes; all models** |
| Whole amount before printing: | **Checkometer, F & E, Defiance,** (all models) |
| Whole amount after printing: | **Checkometer, F & E, Defiance,** (all models) |
| Set up retained for repeated amounts: | **Checkometer, F & E, Defiance,** (all models, but only Model No. 1 is automatically inked) |


# Check Writers and Protectors

**Rebuilt and perfect—All makes guaranteed**

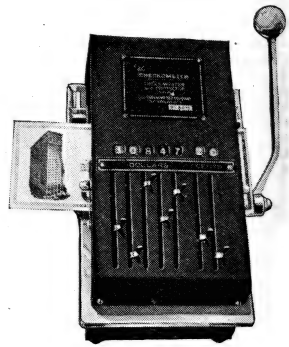
We have the largest stock of rebuilt check writers in the world and can furnish any quantity at the lowest prices. Satisfaction guaranteed or money refunded. We will ship on open terms to rated concerns only—regular terms, C. O. D.

**Send us a trial order.**

**AMERICAN CHECKWRITER CO.**
**1119-21 Manhattan Bldg.**
**CHICAGO**

## CHECKOMETER

Made by the Checkometer Company, 417 South Dearborn Street, Chicago, Illinois. Sold by specially appointed agents and dealers.



This machine prints the amount in numerals and at the same time perforates a design (which is not inked) over the payee's name. The entire amount is imprinted in one operation and without resetting, and may be repeated on subsequent checks as desired.

The amount to be imprinted is set up by slide levers set in parallel vertical columns, arranged to form a keyboard (slideboard) on the top surface of the case. The entire set-up is visible both before and after printing, in windows at the top of the keyboard, and may be changed before the impression is made.

Checks are inserted in an opening in the lower front of the machine. Check guides, having friction adjustments, may be set to locate the imprint at the correct position on any size check. The impression is made by a half turn forward and reverse of the operating lever, situated on the right hand side of the machine. The amount, expressed in numerals, is imprinted with reverse type, providing outline characters with an inked background. Type blocks, bearing the name of the user, may be supplied, to show an individual imprint automatically at the beginning of each amount line.




Specimen of Imprint

The ink supply is contained in a reservoir pad, which slips in or out of the side of the machine for re-filling. The filling of the ink pad provides a sufficient supply for the imprinting of 3,000 checks.

The present model, put on the market in July, 1922, is made of steel stampings throughout, with the exception of the operating lever, which is a solid brass forging.

### Models and Prices

Model E, capacity, 999,999.99.....$65.00

## DEFIANCE CHECKWRITING MACHINE

Made by the Defiance Checkwriter Corporation, Rochester, New York. Sold direct by their own salesmen and agents.

The Defiance line of check writing machines are designed each for a specific use, where a large number of checks or where many checks of the same or similar amounts are required such as for payrolls, dividends, or general commercial use. The amount of dollars is printed in words, and the cents in figures on the check, and some models repeat the whole amount in figures. Acid-proof ink is used which penetrates but does not shred or mutilate the check.

The operating element consists of a drum on which the lines of type are cast, each line representing an amount that may be written on the machine. The drum is rotated to the amount to be imprinted, by a hand wheel at one or both sides of the machine. The amount to be imprinted is shown after being set up, by an indicator attached to the hand wheel. On the Payroll and General Utility models, the left hand wheel is used to set up the amount of dollars and the right hand wheel the amount in cents. On the General Utility model, amounts over one hundred dollars are set up by a third hand wheel.




The means of making impressions is by a flat rubber platen or stamping head, which through the operation of a lever at the top of the machine, forces the check down on the type of the drum, which has been inked from

## DEFIANCE CHECKWRITING MACHINE—continued

rollers located under the base of the machine as the drum is rotated for the set-up. The Commercial model differs slightly in its mechanical features from the other types in that it has dials located in the upper section to show the amount to be imprinted and the set-up is made by levers situated at the front of the check table. All models retain the set-up after making impressions.

### Models and Prices

**Commercial, Model No. 1:** Writes single checks at a speed of 700 per hour. Writes amounts in words in the body of the check, but does not repeat amount in figures. Amount range is from 1c to $119,999.99. Has repeating device and constant ink supply making it possible to repeat the same amount with perfect inking on any number of checks without resetting; equipped with individual column release or correction levers and general resetting device. Price..... $300.00

**General Utility, Model No. G-6:** Writes single checks or checks in sheets at a speed of 500 per hour. Writes in words in body of check and repeats amount in numerals at the side. The set-up is retained after each operation but it is necessary after three or four impressions to change the set-up to revise the type. From 1c to $9,999.99. Price..... 350.00

**Payroll Model No. GG:** Made in four ranges of amounts, viz: 1c to $99.99 inclusive; 1c to $199.99 inclusive; $1.00 to $100.99 inclusive; and $101.00 to $200.99 inclusive. It will write single checks or checks in sheets at a speed of 800 per hour. It writes words in the body of the check and repeats amount in numerals at the side. The set-up is retained after each operation, but as on Model G-6, the inking must be renewed every few impressions. Price ..... 250.00

**Dividend Checkwriter, Model No. SS:** Writes at any dividend rate. When dial is set at number of shares, the amount of dividend is computed and is printed in both words and figures with one stroke of the operating handle. It writes single checks or checks in sheets at a speed of 900 per hour. Special drums for different combinations of dividend rates are supplied with the original machine and subsequently as may be needed. Price with original type drum..... 250.00

**Public Utility Model:** A special machine for writing service bills for gas, electric or water companies. It uses a type drum made specially to conform to the prices, terms and other specifications of the user. The drum is interchangeable with any subsequent drums that may be desired. When the dial is set at the number of KW hours, or CF, it prints in one operation the number of cubic feet or kilowatt hours, the total amount, the amount of discount, and the net on the body of the bill and repeats the gross or net or both on the subscribers' remittance coupon. A speed of 1,000 bills per hour can be maintained. Price..... 250.00

**Stock Certificate Writer:** Writes the number of shares in words or numerals, on stock certificates. A speed of 1,000 certificates per hour is possible. Price..... 250.00

## DIMUNETTE

Made by the Defiance Check Writer Company, Rochester, New York. Sold through dealers, department stores, etc.

A small size check protector, imprinting the words "Not Over" together with the even amount expressed in numerals.

## DIMUNETTE—continued

The check is inserted under a stamping head and a dial wheel turned to the amount desired, which is indicated through an aperture in the top of the case. The stamping head has a milled platen, which as it is depressed to make the imprint, macerates the surface of the check and forces the ink into the fibre of the paper.

Ink is supplied from a felt roller as the type wheel revolves. When several checks are to be imprinted from the same set-up, it is necessary to revolve the type wheel to replenish the ink supply, and then re-set the amount.

Price ..... $7.50

## EVERITE

Made by the Everite Manufacturing Company, 5 North LaSalle Street, Chicago, Illinois.

A pocket size check protector, of a design similar to a hand punch, imprinting amounts in numerals.

The check, of any size from a small pocket check to a standard size bank check, is placed in the jaws of the device and held in position by a pressure roller. Amounts to be imprinted are set by turning a knurled knob having numbers indicated around its rim; a pointer designates the amount set up for imprinting. Side gauges provide for imprinting amounts in uniform positions on the check. When the jaws are closed by gripping the handles, the numeral set up is impressed, perforating and shredding the check, and forcing indelible, acid-proof ink into the fibre of the paper.

On the opening motion of the jaws, the check is automatically spaced for the impression of the next numeral.

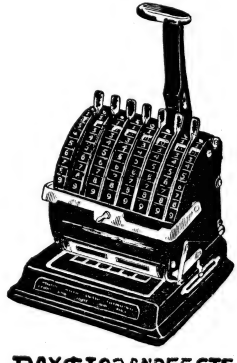
Ink is distributed by a felt roller rotating against the type wheel. The supply is replenished through an aperture in the upper jaw.

Price ..... $10.00

## F. & E. (Series T)

Made by the Hedman Manufacturing Company, 26 East Huron Street, Chicago, Illinois. Sold through specially appointed dealers and agents.

Amounts are printed in Arabic numerals set up by levers extending from slots in parallel vertical columns, in a radial keyboard (slideboard), one lever for each column. The whole amount set up is visible both before and after printing, in windows located at the top of the keyboard, and may be changed before the impression is made. The entire amount is imprinted in one operation and may be written repeatedly with one setting. The imprint crushes the design of the characters in serrated form, into the surface of the check, and forces acid proof ink into the fibre of the paper. Ink is supplied from felt rollers, which may be removed for re-inking.



PAY $102 AND 55 CTS.

## F. & E.—continued

Checks in sheets and voucher checks 9½" wide with the check portion either at the top or bottom, may be accommodated. Equipped with extension shelves and gauges to position the exact printing point on various sizes of checks.

A $10,000 policy insuring the user and his bank against loss on checks, through alterations of amount or payee's name, is supplied with each machine.

Individual imprint of firm name or other designation, may be included in the imprint of all checks if desired, in place of the word "Pay," which precedes each amount line.

### Models and Prices

Voucher Model, equipped with extension shelf, to imprint on voucher checks or checks in sheets as well as ordinary checks. Printing capacity 999,999.99. Green enamel finish.....$ 80.00
Standard Model, printing capacity 99,999.99. Green finish..... 50.00
Premier Model, printing capacity 99,999.99. Mahogany finish..... 65.00
Premier Model, printing capacity 999,999.99. Mahogany finish..... 70.00
Foot Power Model, equipped with tubular steel stand and oak top, 40x16", having two drop leaves. Capacity, 999,999.99..... 110.00
Electric Model with foot lever clutch; equipped with mahogany cabinet 14" square and 9" high, in which is contained the motor, and provided with two drop shelves and mounted on a tubular steel stand. Printing capacity, 999,999.99..... 250.00
Individual imprint die, extra on any model..... 15.00

## INVICTA

A button keyboard type of checkwriter in process of development by the Invicta Check Writer Company, 89-91 Warren Street, New York City. It is understood that no date for quantity production has been set.

Designed principally for writing dividend and payroll checks. Some of the announced features are:

Amounts are printed in both words and figures. The keyboard arrangement resembles that of an adding machine, having numerals ranging from 0 to 9 in each column, representing thousands, hundreds, tens and units of dollars and cents or pounds, shillings and pence, or any other currency. Depression of any key operates the mechanism to bring the figure represented by that key, together with the corresponding amount in words, to the printing position. Checks are inserted in a vertical slide in the rear of the machine.

The operation of a crank, located on the right hand side, makes the impression and automatically resets the type to zero for the next set-up. Type wheels are interchangeable so that the figures can be above or below the wording as required. Should it be desired to repeat the same amount on several checks, the depression of a repeat key, holds the amount of the set-up indefinitely.

Each sector of the machine is locked until the key controlling it is operated, thus, avoiding the possibility of any unauthorized movement of the mechanism. The depression of any key automatically locks all other keys in the same sector. Errors can be corrected before the handle is operated.

The type may be either smooth or cut, so as to macerate the surface of the check. In addition to the printing of amounts, type or electros may be inserted so that an entire check, receipt, certificate of account, etc., may be imprinted at the same time the amount is imprinted. Speed 800 impressions per hour.

The price has not been established.

## SAFEGUARD

Made by the Safeguard Checkwriter Company, factory, Lansdale, Pennsylvania; general sales offices, 5 Beekman Street, New York City. Sold by their own sales force and through their specially appointed dealers and agents.

This checkwriter protects the payee's name as well as the amount. Amounts are imprinted in words, in diagonal lines, one word to each line, and extended across the check from left to right. At the same time that each word is imprinted, an extension of the type wheel macerates a design (which is shredded but not inked), over the payee's name and the amount as expressed in figures.




Amounts are set up one word at a time, but a combination hand wheel and dial located at the left hand side of the machine and the imprinting is made by a stroke of the operating handle, once for each word. The return stroke of the handle automatically moves the check into position for the next word.

A handle locking device is provided to insure uniform impressions and thorough maceration. This lock operates when the handle is started downward, locking the check in the machine and is not released until the handle has completed its return stroke.

The ink supply is contained in a reservoir, sufficient to write one thousand checks without re-inking. Distribution is made automatically and positively to a felt roller which inks the type characters. Imprints are made in one color.

The diagonal arrangement of the words, representing the amount, allow for large amounts to be written on one line. Thirteen words may be written on a standard size 8½-inch check.

A bond in the amount of $10,000, insuring the user against loss from check alteration, is supplied with each machine.

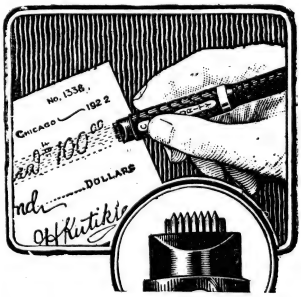
### Models and Prices

Model W, aluminum construction. Price.....$75.00

International Model, equipped with the word designation for the principal monetary units of nearly all countries of the world. (Excepting shillings and pence, it does not provide for imprinting designations of the minor monetary units). The construction of this model follows the same general principles of the Model W, except that it is larger, to accommodate the extra characters on the type wheel. Words representing the amounts are written diagonally and the payee's name is protected by maceration, as above described. Price .....$150.00

## SECURITY CHECK PROTECTOR AND FOUNTAIN PEN

Made by the Security Pen Corporation, 900-10 West Jackson Boulevard, Chicago, Illinois. Sold through specially appointed salesmen and representatives.




A pocket check protector, mounted in the cap of a fountain pen. Its design and construction offers a diversity of uses not ordinarily possible with check protectors. Its protecting feature may be applied to any kind of check or document and at any point on the paper.

Located under a removable head in the cap of the pen case, are a series of irregular-rimmed steel cutting knives or wheels, made of one piece of steel, positioned to rotate against a felt ink pad saturated with an acid proof, check protecting red ink. After the check or other matter has been written with the pen, the words or figures are protected by impressing the cutting wheels against and drawing across the paper, thus cutting uniformly spaced oblong scores into and through the paper, and at the same time filling the scores with the protecting red ink. The process of protecting forms a design or screen cut into the paper across the written words.

The ink is renewed by applying a few drops direct to the cutting knives and allowing it to seep through to the concealed ink pad. This ink is supplied by the manufacturers in small tubes. The device does not add any perceptible weight to the pen.

### Models and Prices

The size of the protecting feature varies slightly according to the size of the pen barrel and the variations in price are contingent upon the size of the pen (which are made in both long and short barrel models) and not upon the check protecting feature.

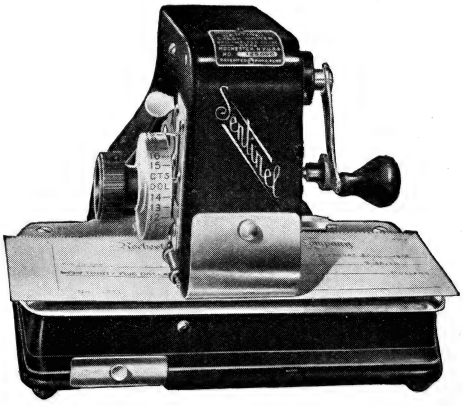
Model No. 300 with No. 3 penpoint.....$3.50
Model No. 400 with No. 4 penpoint..... 4.00
Model No. 600 with No. 6 penpoint..... 5.00
Model No. 800 with No. 8 penpoint..... 7.00



Specimen of Imprint of Sentinel Check Writer Described on Next Page

# SENTINEL
## Forgery Proof Model

Made by Hall-Welter Company, Incorporated. General offices and factory, Rochester, New York. Sold through their own specially appointed dealers and salesmen.




The outstanding feature of the design of this machine is that the type, which is the part in all check writing machines most susceptible to wear and damage, is replaceable easily and quickly by the user. The type bars for each amount that may be written by the machine are mounted individually on a type wheel and held in position by a spring clip. After a period of service, if any character becomes worn or damaged, a new type bar may be secured (without charge for ten years after date of sale) and set in its proper position in the type wheel.

The amounts are set up, one word at a time, by a combination hand wheel and dial located at the left hand side of the machine, and the imprinting is made by a stroke of the operating handle, once for each word. Ink is supplied by a distributor roller which is at all times in contact with the type and to which the supply is replenished from an ink pad located in the base. Imprints are made in one color.

The name Forgery-Proof is given because of the combination of improvements for safeguarding against raising and forgery. The amount is printed in words, set diagonally in a line across the check. The corresponding numeral is imprinted opposite each word. The imprint shreds the paper and forces an acid proof ink through it.

The user's name is also imprinted in the same manner and style as is the amount. A form of notification to the user's bank is supplied which authorizes the bank to pay only such checks on which the user's name has been imprinted by the machine. This notification shows a sample imprint and comprises a consideration under which a bond in the amount of $10,000 is furnished free with each machine, protecting the purchaser and his bank jointly against all check manipulation, including forgery of the signature.

A lock in the base, controlled by a key, provides against use of the device except by authorized persons only.

## Models and Prices

Forgery Proof Model ..... $75.00

## TODD

Made by the Todd Protectograph Company, Incorporated. General offices and factory, Rochester, New York. Sold by their own specially appointed dealers and agents.

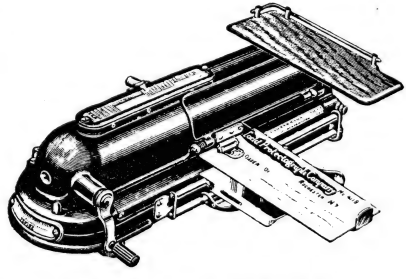
The Todd line of check protecting devices comprises many different models operating on principles that differ widely. Each type of machine will be found described under separate headings.

## PROTECTOGRAPH CHECK WRITERS

### Exactly Model

This machine has for years been the leading Todd model. It writes the amount in words in a straight line across the check. Words representing amounts are written in one color of ink, and those of denominations (the words dollars and cents) are written in a contrasting color.

It is adapted to a wide range of checks and other documents. On ordinary checks, it writes in any desired place, lengthwise of the check or may be adjusted to write diagonally, if desired. Double size voucher checks and similar papers up to 8″ in height, may be inserted providing the writing space is not less than 3″ from the top nor less than 2″ from the bottom of paper. Also takes large stock certificates and similar documents up to 12″ in height, providing the writing space is not more than 6″ from either top or bottom of sheet.



EXACTLY SIX CENTS

Exactly Model and Imprint

Checks are fed into a slot between the base and the upper portion of the machine and are located by side and end gauges for the imprinting of the amount in the exact position. Each word of the amount is set by moving an indicator to the desired word on an index slide, called a dial, located on the top of the machine.

The type is mounted on a cylinder within the machine, one word above the other, set at right angles to the cylinder axis. When the indicator is moved, it moves the cylinder along a sliding axle to bring the type character into printing position. A turn of the operating crank, prints automatically a single word in its proper color, either red or black.

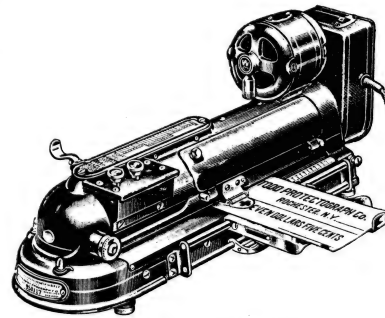
The imprint is shredded into the surface of the check. As the crank is rotated, the type cylinder is made to revolve, drawing the check, by friction, between the type character of the amount to be imprinted, and a grooved wheel or platen, the grooves fitting into and matching perfectly, similar grooves cut in the face of the type. The pressure exerted on the check, cuts or shreds the design of the word into its surface and forces acid proof ink into the fibre.

## PROTECTOGRAPH CHECK WRITERS—continued

### Exactly Model—continued

The check is moved just far enough each time to receive the imprint of the word and space for the next word. Because drawn along by the type for each word imprinted, the length of movement is less for short words than it is for long ones. The spacing between words is always uniform. The mechanism is positive, the check cannot feed without printing or print without feeding. When the last word is written, the indicator is moved to the word "release" at the lower end of the dial, which automatically releases the check and leaves the machine ready for the next check to be inserted.

Ink is distributed to the type faces from an ink roller having two sections, one for black and the other for red ink.




Motor Operated Model

Other features include a check tray holding checks in a convenient position for the operator; a hinged case, giving access to the top for cleaning and to allow a check that has been partly written, to be inspected at any time by raising the top; check release, as above described, is automatic when the indicator is pointed to "release"; the operating crank is detachable. Type is cast from phosphor bronze, platen wheel is steel.

### Thoroughbred Model

Similar in design, construction and operation to the Double Quick model above described, except that it will write amount in words or figures, or part words and part figures, as desired.

The impression of the whole amount in figures is used when a more condensed line of writing is required. The denominations are always imprinted in words. If desired, the amount of dollars may be imprinted in words and the amount of cents in numerals, or the entire amount of both dollars and cents may be imprinted in words.

Figures are imprinted one at a time; words are imprinted two at a time, in combinations of amount and denomination. Samples of two types of imprints, made on the same machine, are shown herewith.




Thoroughbred Model and Two Styles of Imprint

## PROTECTOGRAPH CHECK WRITERS—continued

### Double Quick Model

The same in general construction as the Exactly model described above, except that it will write two words (one representing an amount and another representing a denomination) at one time. A single revolution of the operating handle will write such combinations as, Six Thousand, or Three Hundred, or Seven Dollars, or Five Cents, etc.

The dial has three separate parallel vertical columns, and the indicator has three lateral positions as well as the longitudinal sliding motion. When the indicator is moved to, say, Three, and then pointed to the hundreds column, the word Hundred would be printed at the same time in combination with Three, appearing Three Hundred. If pointed, instead, to the Cents column, Three Cents would be printed when the operating handle was rotated.

Each character is shredded into the paper, the same as by the Exactly model. Imprint is the same style as lower imprint shown with illustration of Thoroughbred model.

### Models and Prices

Exactly Model, writing the word "Exactly", if desired, at the beginning of each amount line.....$ 67.50

Electrically operated model, is the same as the Exactly Model. It is motor driven. A depression of the indicator after it has been set at any amount on the dial, causes the machine to operate automatically. Price ..... 127.50

Double Quick Model, No. 1100, having word Thousand as highest denomination .....$82.50

Double Quick Model, No. 1050, having word Million as highest denomination ..... 82.50

Thoroughbred Model No. 1200..... 87.50

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The following table shows the value of saving but fifteen minutes a day of the average salaries of office executives and employees.

| Yearly Salary | Value of 15 Minutes A Day For One Year | Represents The Interest At 6 Per Cent On |
|---|---|---|
| $25,000.00 | $780.00 | $13,000.00 |
| 20,000.00 | 624.00 | 10,400.00 |
| 15,000.00 | 468.00 | 7,800.00 |
| 12,500.00 | 390.00 | 6,500.00 |
| 10,000.00 | 312.00 | 5,200.00 |
| 5,000.00 | 156.00 | 2,600.00 |
| 4,000.00 | 124.50 | 2,075.00 |
| 3,000.00 | 94.50 | 1,575.00 |
| 2,000.00 | 61.50 | 1,025.00 |
| 1,500.00 | 46.50 | 775.00 |
| 1,000.00 | 30.00 | 500.00 |
| 900.00 | 27.00 | 450.00 |
| 800.00 | 25.50 | 425.00 |
| 700.00 | 22.50 | 375.00 |
| 600.00 | 19.50 | 325.00 |

## PROTECTOGRAPH
### "Not Over" Model

The Protectograph is the earliest type of machine made by this company. It is of the limiting amount type, imprinting the words "Not over" and fixed even amounts expressed in both words and numerals in a straight line any place on the check. The imprint is in two colors, the numerals for the amount being in one color and the balance of the imprint in another.



The type wheel is turned to position for the desired limiting amount as indicated by a dial, and pressure of a hand lever extending from the back of the device upward over its top, brings a steel platen against the type with a reciprocating motion, compressing the paper between and cutting the characters in shreds through the document, at the same time, driving indelible ink through and into the fibre of the paper.

Equipped with adjustable check guides to position the imprint at any point desired on the check. Ink is supplied from a felt roll, rotating against the type wheel. When the same amount is repeated on several checks, the type wheel must be revolved to replenish the supply of ink to the type and the amount then reset.

This type of device has been superseded almost entirely by the more modern, exact amount printing devices manufactured by the same company.

Model K, price.....$31.00

Payroll Model, for writing exact number of dollars on payroll checks. The cents may be filled in, in numerals with pen and ink, at the end of the protecting line. Furnished to stamp forty different amounts of even dollars from $1 to $40; $41 to $80; $81 to $120.$31.00

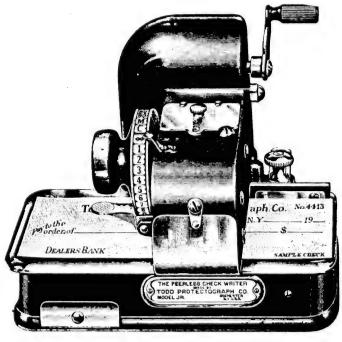
*After you read any advertisement—of any business machine in any magazine or other medium, complete your information by referring to the DIGEST.*

## (TODD) PEERLESS

### JUNIOR MODEL

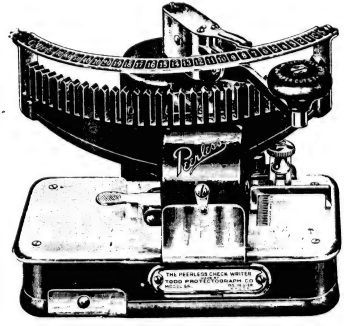
Writes the amount in words, one word at a time, in a straight line across the check, macerating the surface of the check and forcing the ink into the fibre of the paper. Amounts are imprinted in one color, usually red. The inking of the impression is accomplished by an ink roller revolving against the type wheel. This roller may be removed and re-inked by passing it over an ink pad contained in a drawer in the base of the machine.

Check gauges are adjustable to bring the line of writing in the proper position. When check is inserted, it is held in position by a compression roller, controlled by a lever. Amounts are set up one word at a time by a combination hand wheel and dial located at the left hand side of the machine and the imprinting is made by a stroke of the operating handle, once for each word. The return stroke of the handle automatically moves the check into position for the next word. Equipped with 32-character dial for dollars and cents denominations only.
Price, regular model.....$47.50



PEERLESS JUNIOR

A voucher check model is supplied for voucher checks with check portion below the folding line and having amount line within 2½" of the lower edge. This model is the same in general appearance as the machine described above, except that type and check feed are reversed, to write amount of check in proper upright position when lower edge of check is inserted in the machine.
Price .....$47.50



PEERLESS SENIOR

### SENIOR MODEL

The Senior Model is the same as the Junior Model in all general features, except that amounts are set up one word at a time by swinging the operating lever around a segment along the top of which is an index, indicating each amount character. The lever is brought to the character desired and pressed down into a slot, imprinting the words of the amount, one word at a time, and automatically moving the check into position for the next word. Equipped with 30-character dial for dollars and cents.
Price .....$52.50

## (TODD) BEEBE

This device imprints the exact amount in figures and is not recommended as a check writer, but for special purposes only.

Equipped with a 13-character dial with figures and characters representing denominations of dollars and pounds sterling. To operate, an indicator, located on the top of the device is moved to the desired character and an operating handle pulled down, imprinting the figure desired and moving the check into position for the next figure.

Price .....$31.00

## (TODD) NEW SAFETY

An exact amount figure machine, imprinting the amount in figures only. Not recommended as a check writer, but for special purposes only. Sometimes used for protecting amounts represented in foreign exchange.

Equipped with figure characters from 0 to 9 and various combinations of single letters, such as S, M, P, etc., as abbreviations for shillings, marks, pounds, etc.

To operate, the hinged top of the machine is raised, exposing the mechanism. A gauge on the check shelf is set to bring the writing line into the proper position on the check. Check is inserted, the operating handle rotated until the figure desired appears beneath an indicator; the handle is then pressed down, making the imprint and feeding the check forward into position for the next figure. Ink is supplied from a roll revolving against the type wheel.

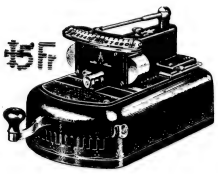
Price .....$31.00

## (TODD) INTERNATIONAL

An exact amount figure machine, imprinting amounts in figures in two colors. Not recommended as a check writer, but for special purposes only. Used principally for foreign exchange.

To operate, check is inserted and gauges adjusted to bring the writing line into proper position on the check. The operating lever is swung around a segment to the figure or character desired and as indicated by a dial on the top of the machine. The operating lever is depressed when the dial indicates the proper character, imprinting the character and feeding the check forward for the next character.

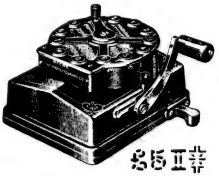
Price .....$31.00



INTERNATIONAL

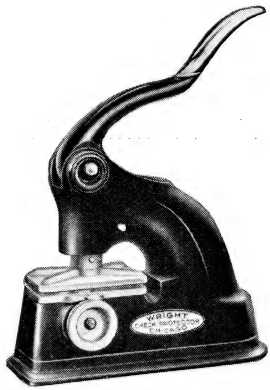


NEW SAFETY



BEEBE

## WRIGHT




Made by Wright & Company, 616 South Michigan Avenue, Chicago, Illinois. Sold through stationers and office appliance dealers.

Similar in appearance to a seal press such as is used by a notary public, this device protects checks by perforating the amount in figures.

Mounted in a bed and turned by a hand wheel on the side of the device, are two wheels carrying dies, one of which is used to set amounts from $10.00 to $90.00, printing also the words "Not Over"; the other wheel is for amounts from $90.00 to $990.00 and is used in combination with the first wheel and the "Not Over" imprint. The dies perforate and shred the paper, but do not carry any ink. If color is desired, a piece of carbon paper may be inserted with the check.

Price .....$8.75

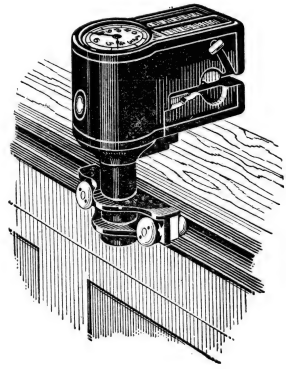
*Any question of a special nature in reference to business machines, will be carefully studied and answered by the publishers.*

# Cloth Measuring Machines

## MEASUREGRAPH

Made by the Measuregraph Company, St. Louis, Missouri. Sold by their own specially appointed sales force through branch offices in all principal cities throughout the country.

A device for use in retail dry goods stores for accurately measuring cloth, ribbon, etc. Made in several models of two different types: Those equipped to measure only, (used extensively in wholesale concerns where computations are not required); those equipped to measure and compute the price at different rates per yard or fraction of a yard.



The machine is mounted on a pedestal and track, affording a means of sliding it along the counter for use by different clerks. Various styles of pedestals are furnished. Cloth is measured as it is drawn through a slot in the back of the machine. The feed is not automatic. A dial, resembling a clock dial, having separate graduations for from one to twelve yards and fractions of a yard or inches, is located in the top of the machine. The hands on the dial denote, progressively, the measurement of the cloth as it is drawn through. The smaller hand indicates the number of full yards; the larger hand indicates the number of inches or fractions of a yard. The clerk continues to draw the cloth through until the dial indicates that the required length has been measured. The stopping of the cloth is not governed automatically.

When the required length has been measured, a small lever is depressed, which cuts a notch in the edge of the material to serve as a guide for the completion of the cutting in the usual way by shears.

Computing models are also provided with a scale showing, in a vertical column, a range of 23 or 48 prices per yard (according to the model). As the cloth is measured, a drum rotates automatically and shows on a line paralleling each amount of price per yard, the computed price for the length measured. The indication of length and the computed price on the chart remain set up after the cloth is removed. The dial and chart are reset by a push button, located at the front of the machine, when a new measurement or computation is to be made.

Models are also made for the metric system of measuring and for computing prices in pounds, shillings, pence, etc., for foreign countries.

### Models and Prices

Measuring Type, measuring capacity 100 yds.....$150.00
Measuring and Computing Type, measuring capacity 12 yds. (standard) with pedestal, sliding track, etc..... 175.00

## YARD-O-METER

Made by the Yard-O-Meter Corporation, 325 Locust Street, St. Louis, Missouri. Sold by their own sales force through branch offices located in principal cities throughout the country.

A measuring and cost computing machine having the following principally emphasized features:




1—Computations are made in advance by the direct-finding method. It is unnecessary to run the cloth through the machine in order to arrive at the cost. The operator can figure costs instantly either before, during, or after the measuring operation. It computes the cost on inches or half-inches of fabric.

2—The machine locks when the desired yardage has been measured, preventing both over and under measurements. If the cloth is not drawn entirely through, the notching device will not function until the full measurement has been made, after which, the machine locks and cannot be fed either backward or forward until reset.

The device consists of a yardage scale, arranged in a vertical column, having graduations for from one to ten yards, and fractions of a yard. In a parallel column are shown graduated amounts representing prices per yard.

To operate, an indicator on the scale is positioned at the graduation representing the length desired. A turning knob is then operated to rotate a drum on which are shown, on lines paralleling each amount per yard, the computed prices for various lengths. The setting of the yardage scale governs the degree of rotation of the computing scale. Thus, before the cloth is put in the machine, or when computing without measuring, the exact computed price for the amount of yardage desired is indicated. After the computed price has been ascertained, the cloth is drawn through a slot in the machine and is automatically stopped when the amount, as indicated on the yardage scale, has been measured. A knife cuts a notch in the side of the cloth, denoting the exact point for cutting off. If the full length for which the machine has been set has not been drawn through, the knife will not operate, thus signaling the clerk to complete the measuring operation.

Chart-O-Meter is similar to the Yard-O-Meter except that it contains the computing device only and does not measure fabric.

### Models and Prices

| | |
|---|---|
| Yard-O-Meter | $125.00 |
| Chart-O-Meter, with single chart | 50.00 |
| Chart-O-Meter, with double chart | 60.00 |

**Note:** Charts and price ranges per yard are furnished to suit the requirements of individual users.

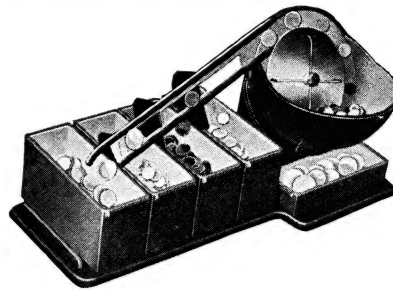
# Coin Counters and Sorters

## STEEL-STRONG

Made by the C. L. Downey Company, 941 Clark Street, Cincinnati, Ohio. Sold through their own salesmen.

### Automatic Coin Sorting Machine

A portable, motor driven device for separating quantities of mixed coins according to their several denominations, from one cent to fifty cents inclusive. It comprises a disk set at an angle and revolving in a hopper, in which the coins to be sorted are thrown. The coins are caught by grooves in the face of the disk, and by its rotation are carried to a chute or runway provided with openings, graduated to the size of each denomination, through which the coins fall into boxes.



Sorting Machine

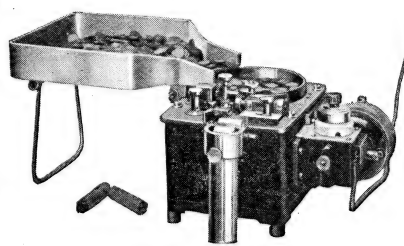
The speed is approximately 1200 coins per minute. Coins are always in sight.

### Models and Prices

Made in one model only, electrically operated, size 10x24 inches; weight net, 30 pounds. Price.....$150.00

### Automatic Coin Counting Machine

Provides for the counting and wrapping, mechanically, of quantities of coins, one denomination at a time. (It does not separate coins into their different denominations.) Any denomination from one cent to fifty cents inclusive, can be counted. It is hand (crank) or motor operated.



Counting Machine

The coins to be counted are placed on an aluminum tray from which they are fed through a trough to the surface of a disk revolving in a circular hopper. A deflector plate, attached to the disk, guides the coins to and through a slot in the hopper wall, where they are gripped by rubber feed rollers and passed through a raceway, delivering them direct into a tubular wrapper. A counter, prominently located, records each coin as it passed through. Coins are always in sight until they enter wrapper.

## STEEL-STRONG—continued

Holders of different sizes are furnished to accommodate wrappers for different denominations. The wrapper is placed in the holder by the operator. Automatic stops are provided for packaging coins in any desired quantities. Speed of hand driven models is from 1500 to 2000 coins, or 10 to 15 packages per minute, depending on skill of operator. This speed can be somewhat increased with motor drive.

### Models and Prices

Model C, hand operated, weight net, 20 pounds.....$175.00

Model C, motor operated, weight net, 30 pounds..... 250.00

Manual counters, holding wrappers to receive coins from a counter or table when counted manually, 4 sizes, 1c to 25c inclusive, per set ..... 10.00

**Note:**—All prices of both sorting and counting machines are F. O. B. Cincinnati.




# Old and New Machines Need

**TYPETONE**

An absolute type cleaner for metal and rubber type.

**PLATEN PEP**

A real platen renewer for typewriters and adding machines.

**OILOTONE**

A better oil for all office appliances. Odorless —Colorless. Big profits for live wires. Write "Doc" Walter Hanson, Pres.

## Hanson 'n Hanson

***Folks of Cleveland, OHIO***

**112-X PROSPECT AVENUE**

***"Born 1913—Still Growing"***

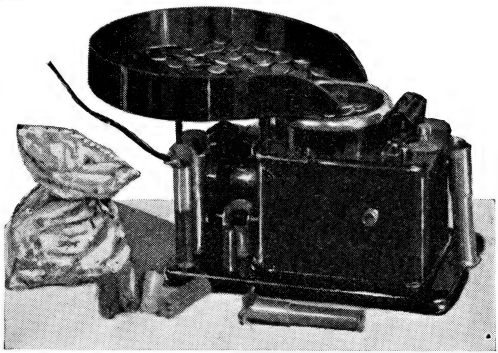
GUARANTEED QUALITY PRODUCTS

**OUR WAY** ABSOLUTE SATISFACTION OR YOUR MONEY BACK **ALWAYS**

## JORGENSEN

Made by the Jorgensen Manufacturing Company, 122 West Jefferson Street, Detroit, Michigan.

**Automatic coin counting machine.** A development from and an improvement on a device known and sold for years as the "Coinometer." Provides for the counting and wrapping of pennies, nickels, dimes, and quarters, one denomination at a time.



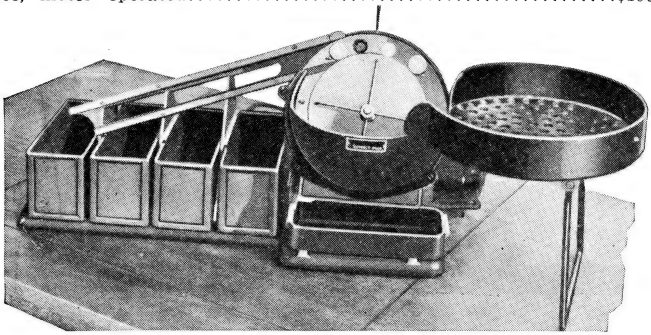
Counting Machine

A disk revolving in the bottom of the hopper, throws the coins by centrifugal force to discharge points where they are engaged by wheels and as they are passed by a counting arm they are registered on a cyclometer counter, and then directed through a chute to tubes or bags. Speed, 1200 coins per minute into bags or 400 per minute into packages. Counts continuously or in limited counts of 20, 25, 40 or 50 coins as desired for packaging.

Price: Hand operated model.....$135.00
Motor operated model..... 225.00

**Automatic coin sorting machine:** A portable device made in both hand and motor operated models, for sorting quantities of mixed lots of pennies, dimes, quarters and halves into individual denominations. The coins are dumped into a hopper in which is mounted a disk, having studs set in its face, when the disk rotates, the coins are caught by the studs and carried to the coin rail finger, whence they roll down by gravity and are assorted by dropping through slots of sizes varying to accommodate the diameter of coins of each denomination. Speed is 1200 coins per minute.

Price, motor operated.....$150.00



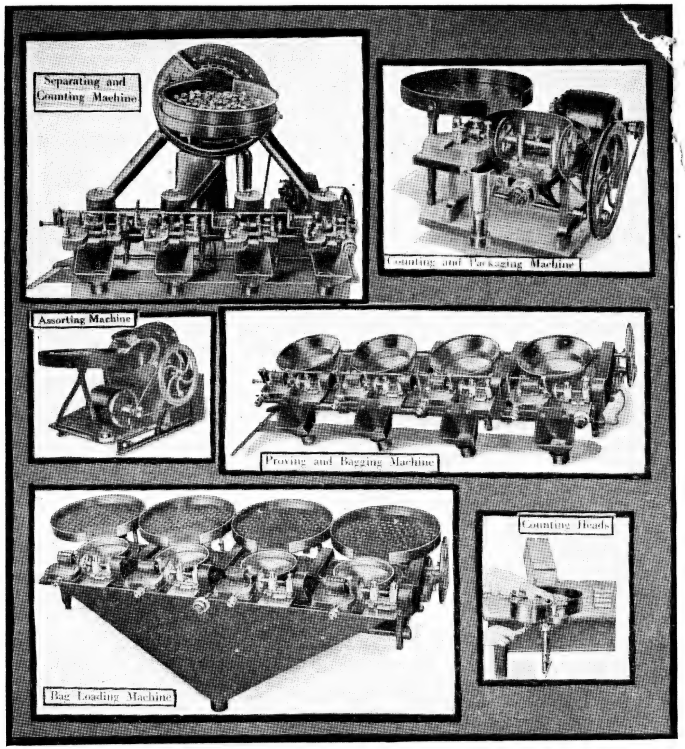
Sorting Machine

## STANDARD-JOHNSON

Made by the Standard-Johnson Company, Incorporated, (a consolidation of the Johnson Coin Counting Machine Company and Standard Coin Counter Incorporated). General offices, 371 Pacific Street, Brooklyn, New York.

Machines manufactured by this company comprise a wide variety of coin handling devices, of which three classes are herein described: (1) coin counters, (2) coin wrappers, (3) coin separators. Other devices, such as street car fare boxes and counters are also manufactured.

**Separating and Counting machine,** for use by street railways, department stores, telephone and other companies receiving mixed coins. Coins in



## STANDARD-JOHNSON—continued

mixed denominations are dumped into a hopper and automatically separated and counted, (by a single operation), into separate containers in which they are temporarily held for comparison of machine count with conductor's or cashier's report. Coins can later be deposited in individual bags. Constructed in different size models to handle three, four or five denominations of coins at one time. Also built to handle metal tokens, but will not handle silver dollars.

Each counting section is equipped with an automatic lock for one thousand coins, the number ordinarily bagged. Locks for other quantities will be furnished if desired.

Each counting section is also equipped with a totalizing cyclometer, registering the total number of coins of each denomination passing through the machine in a given period, and also a set-back cyclometer registering the number of coins of each denomination in each bag or box. The set-backs are mounted on the same shaft and all are reversed to zero in one operation. Motor driven; speed, 1100 coins per minute.

| | Price Outright Sale | Yearly Rental Fee |
|---|---|---|
| Model SC-3, handles any 3 denominations | $2021.25 | $577.50 |
| Model SC-4, handles any 4 denominations | 2310.00 | 660.00 |
| Model SC-5, handles any 5 denominations | 2598.75 | 742.50 |

**Proving and Bagging machine** is a multiple type of counting machine, similar to Model SC, above described, except that it counts and bags coins that have been separated previously. It does not assort coins. Separate hoppers are provided for each denomination.

Motor driven; speed 1,500 coins per minute of each denomination.
Model DS1, 4 denominations.....$1732.50
Model DS1, 5 denominations..... 1925.00

**Counting and Wrapping machine,** for the rapid packaging of separate denominations of coins, in tubular wrappers, by banks, department stores, street railways, telephone companies, etc. Counts and wraps pennies, nickels, dimes, quarters and half dollars at a speed of ten or twelve packages per minute, depending on the skill of the operator. Can also be used for bagging.

Coins of any one denomination are fed from a hopper on to a revolving disk from which they are thrown by centrifugal force through an aperture, tripping a counter arm as they pass through. They then drop into tubes, holding tubular wrappers. As one wrapper is being filled, another filled wrapper is discharged.

Equipped with wrapper rack stand and tray for packaged coins; automatic locks for 20, 25, 40, 50 or other number of coins. Built for metal tokens in addition to coins, if desired.
Price, Model EW, motor driven.....$750.00

**Bag Loading machine,** for loading bags with pre-determined amounts of coins for cash register clerks in department stores. Counts pennies, nickels, dimes and quarters, and can also be made to count half dollars.

Coins in separate denominations are dumped in individual hoppers for each denomination. Each counting section is equipped with a continuous register and automatic lock for any given number. When the machine is set in motion, the exact number of each denomination of coins is counted and deposited in a bag. For example: a store may supply each cash register clerk with $9.50 in coin, consisting of 50 pennies, 20 nickels, 30

## STANDARD-JOHNSON—continued

dimes and 20 quarters. This amount is accurately counted and deposited in a bag in two seconds. Coins may be delivered in stacking tubes for each denomination if desired. Also used for counting bags of coin or filling envelopes.

Price, Model DSO, motor driven, for 4 denominations.....$1575.00
Price, Model DSO, motor driven, for 5 denominations..... 1925.00

**Counting and Packaging machine,** for counting and packaging separate denominations of coins in large banks, street railways, department stores, etc.

Similar to bag loading machine Model DSO, above described, except that it has but one hopper to accommodate one denomination of coin at a time. Equipped with continuous or set-back register and automatic locks for 20, 25, 40 or 50 coins. Automatic lock for 1,000 coins can be substituted for the other locks if used for bagging only. Speed, 2000 coins per minute counting into bags, or 7 to 9 packages per minute, depending on the skill of the operator. May be equipped with attachments for packaging in tubular wrappers. Also built to handle metal tokens.

Price, Model NE-5, motor operated, handles pennies, nickels, dimes, quarters or halves.....$500.00
Model NE-6, handles coins as above and silver dollars..... 550.00
Model N-4, hand operated, handles pennies, nickels, dimes or quarters ..... 200.00
Model N-5, hand operated, handles coins as above and half-dollars ..... 290.00
Model N-6, hand operated, handles silver dollars and all minor coins ..... 350.00

A smaller model of counting and packaging machine is made for use for counter work in large banks, and for general use in small banks, churches, etc., for counting separated denominations into bags or packages. Counts pennies, nickels, dimes and quarters only. Speed, 1500 coins per minute counting into bags, or 5 to 7 packages per minute, depending on the skill of the operator. Automatic locks for 10, 20, 25, 30, 40, 50 and 100 coins. May also be set to count continuously into bags. Hand operated.

Price, Model B1.....$175.00

**Continuous Counting and Bagging machine,** for rapid and continuous bagging of coins in mints and Federal Reserve banks. Coins of one denomination at a time are dumped into a hopper and automatically counted at a speed of 2000 coins per minute. Equipped with automatic lock for 1000 coins and multiples thereof.

Price, Model MM-5, counts pennies, nickels, dimes, quarters & halves.$600.00
Price, Model MM-6, counts coins as above, also silver dollars..... 650.00

**Assorting machine.** Assorts pennies, nickels, dimes, quarters and halves into wooden boxes. Also built to assort metal tokens and coins if desired. Speed, 1000 coins per minute.

Price, Model ES-2, motor driven.....$200.00
Price, Model HS-2, hand driven..... 150.00

**Counting machine heads for gas, telephone and vending companies,** handling only one denomination of coin. Equipped with continuous register, automatic stops for 25 and 50 on penny and dime heads, and 20 and 40 for all other sizes of coin. May be set for continuous count and may be equipped with attachment for packaging in tubular wrappers. Can be built for all sizes of metal tokens with automatic stops for any number desired per package.

Price .....$75.00




*—with the key on the cover*

# *Office Appliance News when it IS news*

A NECESSARY requirement to keeping at the head of the procession is a knowledge of developments in the field when they occur. OFFICE APPLIANCES thru its various avenues of information secures and prints news of important happenings in the field, describes new devices and gives other valuable information when the news is new.

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## THE OFFICE APPLIANCE CO.

417 S. DEARBORN STREET
CHICAGO, ILL.

# Coin Changing Devices

Coin changing devices are designed for the accurate, speedy and convenient delivery of coin change in banks, retail stores, restaurants, theaters, and similar establishments employing cashiers, and for payroll departments of factories and large business institutions.

**Their Construction** embodies a tray having separate compartments or channels, for each denomination of coin, connected with a keyboard from which by the depression of keys singly or in combination, the proper number of coins are automatically selected to make the desired amount of change.

Two types are made:

**The Payer or Building-Up Type** is constructed to deliver the amount indicated by the key selected and follows the procedure of calculating change when delivering from a cash drawer. For instance, upon pressure of key marked 55, the machine would deliver 55 cents.

**The Changer Type** is constructed to compute and deliver the difference in change between the amount (of sale) indicated by the key which is selected, and one dollar. For instance, upon pressure of the key marked 55, this type of machine would deliver 45 cents, being the change returnable out of one dollar. Changer type machines are equipped with what is known as changer bars, operating from a key changing the machine from a $1.00 basis, to compute and deliver return change from 25 cents, 50 cents or 75 cents, if required.

**Split-Change** is a term used by all makers to denote the operation of delivering in coins of small denominations, full amounts of 25 cents, 50 cents or $1.00. For instance, if it is desired to provide change for $1.00 in small coins, it would, upon operation of the split-change key marked $1.00, deliver one half-dollar, one quarter, two dimes and one nickel. In a corresponding way, it would through the operation of changer bars, deliver coins of small denominations for 25 cents and 50 cents.

**Four Distinct Methods of Delivery** are followed by practically all makers:

**Direct Delivery** method delivers the coins through a chute into a metal cup at the right or left side of the machine. The design of the cup is such that the customer can easily and quickly remove the coins.

**Hand delivery** drops the coins as they are selected by the machine, into a compartment fitted with a trap door opened automatically by the pressure of the hand, dropping the coins which have been accumulated, into the palm.

**Payroll Delivery** usually consists of a spout for feeding the coins directly into payroll envelopes.

**Department Store Machines** are sometimes equipped with a bracket to hold carrier boxes of overhead or pneumatic tube systems so that the coins are deposited directly into them from the machine. Optional delivery by any method, to right or left hand side of machine, is provided by all makers.

## BRANDT AUTOMATIC CASHIER

Made by the Brandt Manufacturing Company, executive office and factory: Watertown, Wisconsin. Sold by their own sales force operating from factory controlled district offices.

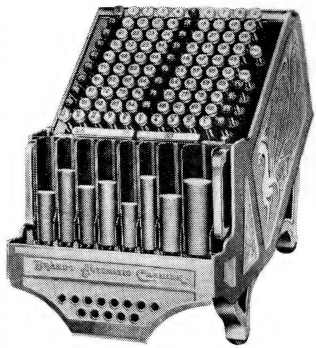
Built in two distinct types and each type is made in several different models.

## BRANDT AUTOMATIC CASHIER—continued

**The payer type** is constructed to deliver the amount indicated by the key which is selected. For instance: upon pressure of key marked 67, the machine would deliver 67c in the fewest number of coins.

**The changer type** is constructed to deliver the difference in change between the amount (of sale) indicated by the key which is selected, and $1.00. For instance: upon pressure of key marked 67, this type machine would deliver 33c, being the change returnable out of $1.00. Changer models are also equipped to deliver return change from 25c, 50c or 75c if required instead of from $1.00.

**Single key depression** is a feature of this make machine. The keyboard contains a separate key for each amount to the full capacity of the machine and the depression of but one key, on which the amount of the transaction is indicated, operates the machine.



Model No. 61

**Automatic lock** is standard equipment on all models. It locks the machine and signals the operator before any coin channel has become depleted, thus insuring against inaccuracy and short changing.

**Split change keys,** with which all models are equipped, automatically deliver change in various denominations to total 25c, 50c or $1.00. For instance: in changing $1.00, it would, upon operation of the 100 split change key, deliver one half-dollar, one quarter, two dimes and one nickel. It delivers change for 25c and 50c in a corresponding way.

**Changer bars** with which changer models are equipped, place the machine on a 25c, 50c or 75c basis by depression of the proper bar. To illustrate: if a purchase of 31c is made and a half dollar tendered, the pressing of the changer bar marked 50, places the machine on a 50c basis instead of the usual $1.00 basis, and then the depression of key marked 31, will return 19c, being the correct change out of the half dollar.

The standard machine drops the coins as they are selected from various channels, when the machine is operated, into a compartment fitted with a trap door opened automatically by the pressure of the hand, dropping the coins, which have been accumulated, into the palm. The payroll machine is equipped with a special spout for feeding the coins directly into the envelope. This spout is attached to the regular trap door frame. The changer models may be equipped with attachments to deposit coins directly into carrier boxes or cylinders of overhead and pneumatic tube systems.

### Models and Prices

Payer Model No. 60 is the standard bank and payroll model, paying from 1c to 99c, having eight storage channels.....$200.00

Changer Model No. 61 is the standard changer model, with capacity of from 1c to 99c, having eight storage channels..... 200.00

## BRANDT AUTOMATIC CASHIER—continued

Payer Model No. 62, paying from 1c to $1.00 inclusive, is the same as Model No. 60 with the addition of a silver dollar channel and special silver dollar key ..... $210.00

Changer Model No. 63, with capacity of from 1c to $1.00 inclusive, is the same as Model No. 61 with the addition of a silver dollar channel and special silver dollar key ..... 210.00

Payer Model No. 64 is designed exclusively for payroll and handles coins in multiples of 5c ..... 180.00

Changer Model No. 65, with capacity of from 5c to 95c in multiples of 5c, and having eight storage channels ..... 160.00

Payer Model No. 68, with capacity of from 1c to $5.00 inclusive and equipped to handle silver dollars over $1.00. Has eleven storage channels ..... 250.00

Universo Model, Payer. Pays from 1c to 99c inclusive; key arrangement is from 5c to 95c and penny keys to 4c, the depression of two keys being required for an amount with pennies over 5c .... 85.00

Universo Model, Changer, same as above ..... 95.00

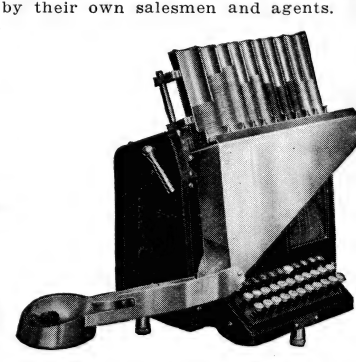
Extension coin storage trays for Model No. 60 ..... 26.00

Extension coin storage trays for Model No. 62 ..... 31.00

## HOEFER CHANGE-MAKER

Made by the Hoefer Change-Maker Company, 3700 East Twelfth Street, Kansas City, Missouri. Sold direct by their own salesmen and agents.

Present model is of the **Payer or "Building up" type.** Some earlier models, marketed between 1914 and 1916, were of the Changer type.



**Keyboard** consists of 33 keys arranged in three rows, with double set of penny keys; delivers change in any amount from 1c to $1.00, in the least number of coins; split-change keys for all denominations.

**Automatic safety lock** operates when any channel empties, automatically locking every key operating on that channel; lever is provided for instant release to permit transaction to be completed by split-change key, after which lock again automatically goes into action until channel is filled.

Non-rustible, one-piece coin holder, taking all denominations up to and including dollars, having open coin channels, permit inserting coins at any height; capacity $130.00. Reserve tray has a capacity of $149.00 and is divided to hold coins in quantities less than amounts ordinarily put up in rolls. Coin holder and reserve tray are removable.

Removable delivery attachments permit changing delivery from direct, to hand or to payroll, or to right or left side of machine.

An adjustment is provided to take up any possible wear in ejector mechanism.

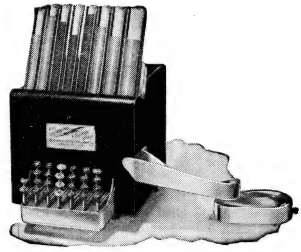
## HOEFER CHANGE MAKER—continued

### Models and Prices

Model D, Direct delivery, right or left.....$135.00
Side delivery, right or left (for payroll envelopes)..... 125.00
Hand delivery, over keyboard..... 125.00
Reserve tray and brackets..... 10.00
Extension on channels, additional..... 15.00

## LIGHTNING

Made by the Lightning Coin Changer Company, 844 Rush street, Chicago, Illinois.



**A Payer type** of machine, having a keyboard of 26 keys, in four banks, arranged for the four quarters of the dollar. Split-change keys for 25 cts., 50 cts., and $1.00. Coin tray holds $120.00 in change and is removable. The channels are of German Silver (non-tarnishing); construction provides against the coins falling out when the tray is removed.

The construction of the delivery cup and chute is such that the coins as selected, roll on their edge at high speed to the bottom of the chute, where all forward motion is stopped; coins turn flat and are then deposited in the coin cup from which they are readily removed by the customer. Coins cannot roll or slide out of the cup. Also made for hand delivery or to deposit change directly into pneumatic tube system carriers. All models are 9½ inches deep by 12 inches wide by 15¼ inches high to top of coin tray. Weight 20 pounds.

### Models and Prices

**(All models can be furnished for right or left side delivery)**

Model No. 1, Regular model, direct delivery, 1c to $1.00.....$125.00
Model No. 2, Bank model, hand delivery, 1c to $1.00..... 125.00
Model No. 3, Payroll model, delivers direct to pay envelopes, 1c to $1.00 ..... 125.00
Department Store Special Model, delivers direct to pneumatic tube systems ..... 125.00
(Add $10.00 to above prices for delivery west of Rocky Mountains).

## McGILL CHANGE MAKER

Made by The McGill Metal Products Company, 1640 Walnut Street, Chicago, Illinois. Sold through dealers.

The McGill Change Maker is a device for use in making change in coins rapidly. It is designed for use in banks, stores and for payroll work.

In principle, it follows the "building up" process in making change, as is done when using a cash drawer, that is, the coins are selected (or built up) from the amount of the transaction.

## McGILL CHANGE MAKER—continued

The coins are stored in six vertical magazines, each holding coins of a different denomination. Each depression of a key with which each magazine is equipped, delivers a single coin through a chute into a cup from which it is removed by the customer. The chute is adjustable to six positions and may be adapted to deliver coins directly into payroll envelopes.

### Models and Prices

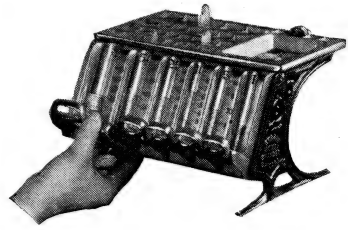
Only one model is made.....List Price $60.00

## STAATS MONEY CHANGER

Made by Geo. F. Clute Mfg. Co., 358 West Madison Street, Chicago, Ill. Sold direct and through dealers and stationers.

The Staats Changer is a device for quick selection of coins in making change. It has been on the market nearly thirty years.

It consists of a frame, fitted with columns or channels, in which coins are stored. Each depression of the lever at the bottom of any column releases one coin of the denomination stored in that column and drops it into the palm of the hand. Gauges show the total value of coins in each column. An auxiliary storage tray, fitted on top of the machine, is regular equipment.



### Models and Prices

Model No. 1, Nickel plated.....List Price $20.00

*The book you are now reading is the only one of its kind. It includes all machines without a penny of cost to the manufacturer. You can, therefore, understand why it can afford to be neutral.*

# Combination Registers

Included under this general heading will be found all machines for registering cash and charge sales and related transactions, except cash registers of regular construction and operation.

There are two general types of combination registers:

(1) Those having adding mechanisms, as represented by adding machines equipped with cash drawers.

(2) Those without adding mechanisms, as represented by autographic registers equipped with cash drawers.

## Adding Machine—Cash Drawer Combination Registers

These are comparatively new devices—the first successful models having been put on the market in 1919. They consist of an adding machine, usually of the listing type, mounted on a base cash drawer cabinet, and having a means of automatically opening the cash drawer as each item or sale is registered. They are intended to perform the functions of a cash register, besides providing the regular use of the adding machine, whenever required for general adding machine purposes.

Perhaps the foremost reason for their growing popularity is their wide range of adaptability to the requirements of any business, large or small.

Next to the economy of combining the mechanism of the adding machine with a cash drawer, for cash register purposes, and the speed of operation possible with adding machine construction, the principally emphasized feature of such registers is the printed detailed record strip which they provide. This detailed record strip affords a comprehensive analysis of all transactions, the operations of each clerk, and the classification of transactions by departments, at the end of each day's business or at other periods.

Some makers provide for the issuing of an itemized printed receipt to the customer, showing the amount and department classification of each item, the total amount of the transaction, and the clerk's initials or number. Duplex adding machine units (two-counter or dual-printing mechanism) on such receipt issuing models accumulate the grand total of all transactions, in addition to the totals of the individual transactions.

In adapting the adding machine unit to cash register requirements and to provide the greatest measure of detail in recording transactions on the detail strip, extensive changes are made by the different makers in the adding and printing mechanisms.

Special columns on the keyboard and in the printing mechanism are reserved for designating and printing the clerk's number or initials, and for denoting the department or other classification of each transaction. Means are provided for designating "cash," "charge," "received-on-account," or "paid-out" items. Some machines non-add "charge" and "paid-out" items; others register and automatically subtract them from the total of accumulated sales.

Simplified record forms and systems are furnished by each maker to record and classify the figures of business provided by the detail strip.

All makes are designed to prevent dishonesty, by enforcing registration of each transaction. They are equipped with locks to prevent the taking or seeing of totals by unauthorized persons. The general construction allows the adding machine to be removed, for regular adding machine operations, away from the cash drawer.

## COMBINATION REGISTERS—continued

Combination registers so far marketed, are not provided with a means of showing the registered amount of the transaction by an indicator, such as is usually embodied in standard cash register construction. The different makers discount the necessity of such display indication, claiming advantages in accomplishing the purpose of indication by the position and design of the recording tape on their machines as a check on dishonesty by clerks, and the option of issuing a receipt for the customer as proof that the correct amount of the transaction has been registered; also that a duplicate of the customer's receipt can be retained, if desired, on the detail strip, locked in the register.

The usual practice has been to take the total of registered transactions, and clear the machine when it was to be used during the day for straight adding machine work. Very recent developments, however, now make possible retaining the total of cash or other registered transactions undisturbed, while items, such as invoices, etc., are listed. This feature allows a more convenient and practical use of the adding machine unit at any time during the day.

Credit drawers are constructed in some adding machine combination registers. They are designed for the systematic filing of sales slips representing charge or credit transactions. A growing practice is to provide for the automatic opening of the credit drawer through the operation of registering a credit transaction. In such cases, the cash drawer remains closed.

### Autographic Registers With Cash Drawers

These machines embody no additional equipment than that usually incorporated in the autographic register units, as used without cash drawers, except that by the issuing of a slip, the cash drawer is made to open. Some makes have a push pin by which the drawer is opened manually, (therefore not automatically).

Recent development of autographic registers has been promoted, perhaps, to meet additional requirements when used with cash drawers. One such improvement is a rewound tally strip (common in its usual form in many designs of autographic registers), that provides totals of transactions only, in convenient summary form for easy adding at the end of a day's business.

The catalog pages, following, will show variations of the autographic principle of combination registers.

## Analysis of Operations and Functions of Different Types of Combination Registers Having an Adding Machine Combined With Cash Drawer

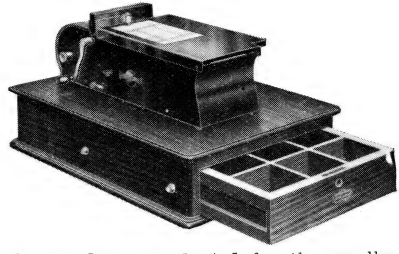
The operation follows general cash register principles, but permits of wide variations to suit the existing systems of various lines of business. The style and extent of records provided, are also varied.

| Type | Method of Registering | Total of All Daily Transactions | * Kind of Record Provided |
|---|---|---|---|
| Single Counter with Single detail strip: (Add-Index, American, McCaskey, Wales, Sundstrand, Dalton.) | Individual items of each transaction are listed and totaled | Is not accumulated | Printed section of tape is given to customer as receipt or— Is rewound in a continuous strip in the machine as a permanent record. |
| | or— Total only of each transaction is registered. | Is accumulated, and may be printed. | |
| Single Counter with Double detail strip: (Add-Index, American, McCaskey, Wales, Sundstrand, Dalton.) | Individual items of each transaction are listed and totaled | Is not accumulated but may be obtained by adding together individual totals as shown on duplicate tape. | Printed section of tape is given to customer as receipt and— Duplicate tape is rewound in machine as a permanent record. |
| | or— Total only of each transaction is registered. | Is accumulated, may be printed, and checks with duplicate tape. | |
| Duplex with Single detail strip: (Wales Duplex Cashier.) | Individual items of each transaction are listed and totaled | Is accumulated in grand total counter and may be printed. | Printed section of tape is given to customer as receipt or— Is rewound in a continuous strip in the machine as a permanent record. |
| | or— Total only of each transaction is registered. | | |
| Duplex with Double detail strips: (Wales Duplex Cashier.) | Individual items of each transaction are listed and totaled | Is accumulated in grand total counter, may be printed and checks with duplicate tape. | Printed section of one tape is given to customer as receipt and— Duplicate tape is rewound in machine as a permanent record. |
| | or— Total only of each transaction is registered. | | |
| Single Counter Duplex Printing with Double detail strips: (separate rolls, single wound.) (Sundstrand cash and carry model) | Individual items of each transaction are listed and totaled | Is carried in machine, may be printed and checks with permanent tape. | Printed section of one tape is given to customer as receipt and— Other tape on which totals only are printed is rewound in machine as a permanent record. |
| | or— Total only of each transaction is registered. | | |

* Printed records embody in addition to amount of each item or total of the transaction, all information that can be registered on each type of machine, such as, clerk's initial, kind of transaction (Paid-out, Charge, Received on Account), department designation, etc.

## ACCOUNTAGRAPH

Made by the Globe Register Company, Cincinnati, Ohio. Sold by their own sales force through branch offices in principal cities.



A Globe Recorder (for description see section "Autographic Registers"), placed upon a cash drawer and equipped with convenient lock and key, permitting locking the mechanism and requiring the issuing of a sales slip to open the drawer. Drawer opens and bell rings automatically as tickets are issued. A lock fastens cash drawer when desired. Finish, hand rubbed mahogany with built-up mahogany veneer top; 6 coin compartments and 3 bill compartments. Over-all measurements of cash drawers adapted for the smaller size registers, are: width, 15 inches, length 20½ inches, height 5 inches; slightly larger cabinets are used for the larger machines.

### Models and Prices

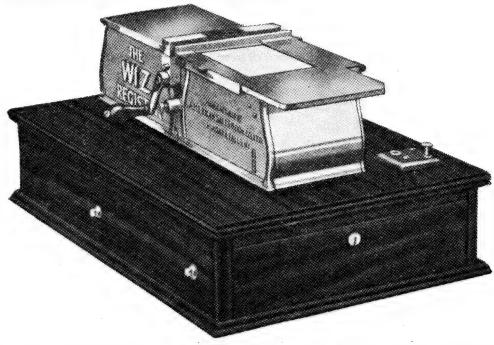
No. 1 with Junior Recorder (4¼x7½-inch ticket or smaller).....$95.00

Combination of Model GAR Recorder and Cash Drawer:

| Slip widths | 4¼" | 5¾" | 6½" | 8½" |
|---|---|---|---|---|
| Model | **541** | **551** | **561** | **581** |
| Price | $105.00 | $110.00 | $120.00 | $125.00 |

## AMERICAN SALES BOOK COMPANY

Made by the American Sales Book Company, Limited. Executive offices, Elmira, New York. Sold east of the Rocky Mountains by their own specially appointed salesmen; west of the Rocky Mountains by the Pacific Manifolding Book Company, Emeryville, California.




A combination of the Wiz or Aliner Model Autographic Register with a cash drawer. (For description of the autographic register, see section "Autographic Registers.")

The cash drawer is of wood, in mahogany or oak finish, with eleven or twelve compartments; three for bills, one or two for tickets, (according to the size), and the others for cash. The drawer opens automatically through the operation of issuing tickets from the register.

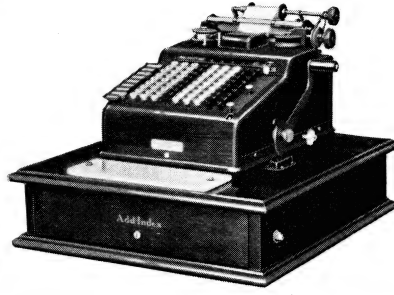
Price, in addition to the Autographic Register unit:

Large size, 24½"x18½"x5", oak or mahogany.....$40.00

Small size, 20½"x14½"x5", oak or mahogany..... 50.00

## ADD-INDEX

Made by the Add-Index Corporation, 120 Broadway, New York City. Sold through specially appointed dealers and agents.




A combination of an Add-Index adding and listing machine with an automatic cash drawer. The adding machine unit embodies all standard features as described on Page 26. Additional equipment has been added and changes have been made to adapt it for cash register work.

The keyboard is split into two sections. The adding section (on the right side) contains five rows of keys. The listing capacity is 5 columns and the adding capacity is 6 columns.

The designating section (on the left) contains two or three rows of keys. The extreme left hand column of what would be the normal 9-column keyboard, contains keys marked with initials for clerks. In a parallel column to the left, are keys marked with numbers for departments. Some models have an additional row of keys paralleling the two above described, for the setting up of symbols or dates.

Auxiliary keys are provided for the registering of charge sales, paid out and received-on-account items. Other control keys are, non-print, general keyboard correction, repeat, total and sub-total keys.

Amounts registered in connection with charge or paid-out keys, do not add in the adding counter, while received-on-account items are added when amounts are set up on the keyboard and registered. By drawing down the operating handle, the cash drawer automatically opens and the impression is made on the tape showing the clerk's initials, the department number and the amount of the sale. The cash drawer opens each time an amount is registered. The total windows or dials in which the total of sales during the day are accumulated, is equipped with a slide which may be closed and locked by a key. The same key locks the totaling device so that totals may not be taken, or the machine cleared, by any except authorized persons.

An automatic take-up device operating from the carriage platen shaft by means of a coiled spring wire, rewinds and stores the tape as printed, for audit at the end of the day. A housing extending over the rewound tape, protects it from the view and interference of customers.

The drawer cabinet is made of wood, mahogany finish; the drawer is also of wood with metal compartments. The drawer opening device, actuated by the handle of the adding machine unit, is an enclosed slide designed to prevent the opening of the drawer without operating the handle.

The Add-Index Credit System, described under "Credit Registers," is contained in a drawer cabinet designed to fit beneath the cash drawer of the combination register, thus providing a two-drawer equipment. So equipped the cash drawer opens only when cash or paid out items are registered, and the credit drawer opens when received on account and charge items are registered.

## ADD-INDEX—continued

### Models and Prices

| Model | Item Capacity | Total Capacity | Clerk Cols. | Dept. Cols. | Symbol Cols. | Price 1 Drawer | Price 2 Drawers |
|---|---|---|---|---|---|---|---|
| No. 871 | 5 cols. | 6 places | .. | 2 | .. | $200.00 | $275.00 |
| No. 875 | 5 cols. | 6 places | 1 | 1 | .. | 225.00 | 300.00 |
| No. 881 | 5 cols. | 6 places | 1 | 2 | .. | 250.00 | 325.00 |
| No. 885 | 5 cols. | 6 places | 1 | 1 | 1 | 250.00 | 325.00 |
| No. 891 | 6 cols. | 6 places | 1 | 2 | .. | 275.00 | 350.00 |
| No. 895 | 6 cols. | 6 places | 1 | 1 | 1 | 275.00 | 350.00 |

Two drawer models have a cash drawer, and a 54-account credit drawer. For complete description of credit system, see section "Credit Registers."

### Add-Index Secretary

The adding machine unit of this model is the same as described for the preceding models. The cabinet is of all steel, fire resisting construction.



There are five drawers, two with interchangeable inserts suitable to file correspondence and other data, one credit drawer and one cash drawer. The fifth drawer is designed like a table desk, having an inkwell and a pen tray. It is located at a convenient desk height. The lid, which is the writing surface, can be lifted up for the storage of stationery or other materials in the drawer.

The front of the device is a heavy sliding steel curtain, similar in operation to the curtain on a roll top desk. The drawer fronts are of steel construction lined with asbestos.

The lower section of the cabinet contains a safe section with a locked compartment, and a space for books. When closed, the curtain is locked with a key at the top. Unlocking permits the curtain to be dropped half way down the front of the cabinet and a combination lock permits it to be lowered further to give access to the safe section.

The adding machine unit is positioned on the top of the cabinet, and at the close of the day, if desired, may be stored in the lower section.

The cabinet is approximately 42″ high, 26″ wide and 31″ from front to back; weight is between 200 and 300 pounds, depending upon the inserts for the drawers. It is finished in mahogany or oak, lined with asbestos and has inner air chambers and steel lining.

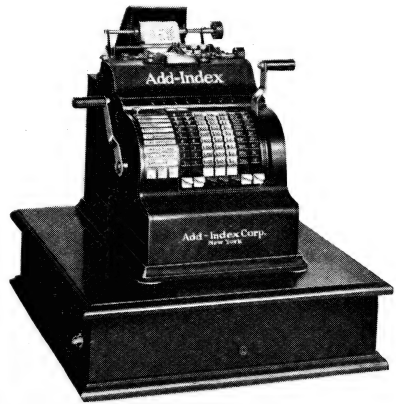
## ADD-INDEX—continued

### Models and Prices

Secretary, cabinet only (without adding machine unit).....$400.00
With adding machine unit of Model 871, previously described..... 550.00
With adding machine unit of Model 875, previously described..... 575.00
With adding machine unit of Model 881, previously described..... 600.00
With adding machine unit of Model 885, previously described..... 600.00
With adding machine unit of Model 891, previously described..... 625.00
With adding machine unit of Model 895, previously described..... 625.00

## ADD-INDEX
### (Lever-set Type)

This device was formerly known as the American Combination Register, manufactured and sold for several years by the American Can Company.




It is a combination of an American adding and listing machine, with an automatic cash drawer. The keyboard is divided into a section of five columns for the registering of amounts, and two columns at the extreme left of the keyboard for registering numbers representing clerks and department numbers. An index device called a "Department Chart Holder," is located on the left front of the case opposite and serving as an index for those two columns for designating numbers of clerks and departments, in connection with each amount registered. It holds a removable index card, which can be changed to suit the requirements of each particular business.

An attachment positioned over the printer of the adding machine unit provides an automatic split of the printing between the clerk and department columns on the left, and the item columns on the right. The split does not affect the totaling. However, when a total is taken only the total of the item columns is printed. By dis-engaging the split device, the entire capacity of the machine is available for straight adding machine work.

The tape, as it is used, is rewound manually on a spool located at the back of the printing point. A housing extending over the rewound tape protects it from the view and interference of customers.

This machine has a radial, corrugated keyboard. There are seven columns, each having a corrugation or depression for each number position. The index finger is placed in the corrugation on the number to be set up and the lever for that column (normally positioned at the bottom of the column) is raised by the thumb until it is stopped by the finger. The lever stays in the set up position and indicates the amount to be registered.

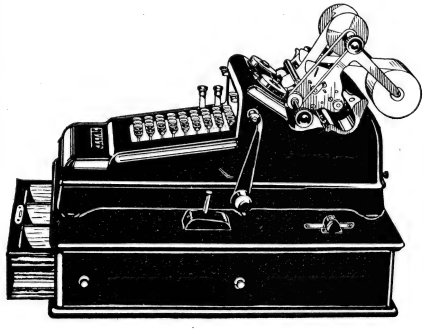
# The Indiana Cash

SHELBYVILLE,

## *is filling a need for the adding machine user dealer and salesman—*

You can add to your present earnings or build up a profitable business selling the man who needs a cash register, but who cannot afford to pay the usual price for one.

The Indiana Cash Drawer and Rewind Device provides everything necessary to make a detail-strip cash register out of an adding machine, at a cost that is within reason. The regular use of the adding machine is in no way impaired.



*Burroughs adding machine equipped with an Indiana Cash Drawer and Rewind Device. Equipped in the field—no connections to make.*

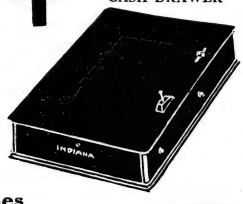
*We are the makers of cash drawers supplied as original equipment with prominent combination registers*

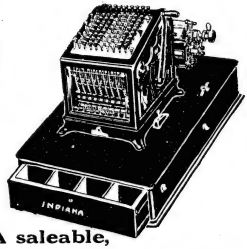
# Drawer Company
## INDIANA



**Slow moving obsolete adding machines**

\+ **"INDIANA"** CASH DRAWER




= **A saleable, quick moving, profit making cash register**

### *Retail List Prices*

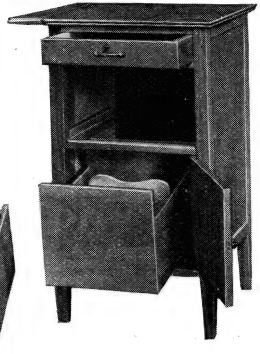
Indiana Cash Drawer, ..... $35.00 to $50.00

Rewind Device, ..... 17.50

Transaction Counter, ..... 7.50

Four-In-One Cabinet,
Oak ..... 75.00
Mahogany ..... 85.00

*Send for Complete catalog and discounts*



### *The Four-in-One Cabinet*

1—A convenient adding machine stand.

2—An automatic cash drawer, built to open automatically by the operation of any adding machine placed on top.

3—A credit file, for filing sales tickets from 3″x4″ up to 8″x14″.

4—A letter size file.



## ADD-INDEX—continued

Control equipment consists of a total key, which is locked against depression and the taking of a total until released with a removable key by the proprietor or other authorized person; combination general keyboard correction and sub-total lever located on the left hand side of the machine; designating keys located on the top of the machine to the right of the printing point, actuating type bars, printing symbols to designate charge, paid out and received-on-account items. The carriage is stationary and will accommodate statements or other forms up to 6" wide. Totals and sub-totals are printed in red.

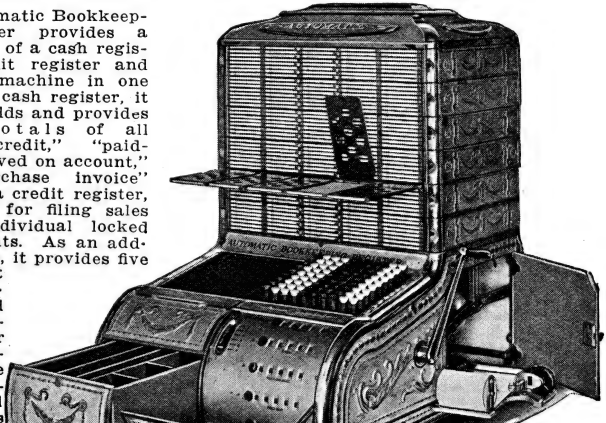
The cash drawer and cabinet are of wood; the drawer has metal compartments. Finish, mahogany or green or black enamel.

### Models and Prices

Model No. 272, black finish ..... $225.00
Model No. 372, green enamel finish ..... 200.00
Model No. 472, mahogany finish ..... 250.00

## AUTOMATIC BOOKKEEPING REGISTER

Made by the International Accounting Machine Company, 90 West Street, New York City. Sold through their own specially appointed dealers and agents.



The Automatic Bookkeeping Register provides a combination of a cash register, a credit register and an adding machine in one unit. As a cash register, it registers, adds and provides separate totals of all "cash," "credit," "paid-out," "received on account," and "purchase invoice" items. As a credit register, it provides for filing sales slips in individual locked compartments. As an adding machine, it provides five different sets of totals, and may be applied for regular adding machine use as required. All transactions are printed on a detail strip. It does not issue a printed receipt.

Its construction embodies a 10-column full button-key keyboard arranged so as to provide five columns for the registering of amounts, one column for clerk's initials, three columns for credit account numbers, and one

## AUTOMATIC BOOKKEEPING REGISTER—continued

column for designation and classification of transactions. The credit file is made in sections to accommodate from 40 to 1000 accounts, or it may be furnished without any credit file sections for use in retail stores where a strictly cash business is done.

The operation consists of designating on the keyboard, the amount of the transaction, the clerk initial and the kind of transaction. The keys in the transaction column control five separate total adding counters, which print the individual items of each classification on the detail strip and show and **print the individual totals** of "credit," "cash," "received on account," "paid out," and "invoices." Totals are concealed, but can be seen at any time by unlocking the register. A complete **printed** record of the day's business is made. If a credit transaction is to be registered, the designation of the account number on the credit set of keys ejects the credit compartment in which the sales slip is to be filed. When "received on account" items are registered the customer's account number is similarly designated, and the correct compartment ejected for immediate crediting of the amount to that account.

### Models and Prices

Model No. 0, base without credit sections, adding machine with 5 total adding counters and cash drawer.....$635.00
Model No. 1, base with one credit section, capacity 40 accounts, adding machine with 5 total adding counters and cash drawer ..... 670.00
For each additional credit section of 40 credit accounts..... 35.00

## AMERICAN CALCULATOR COMBINATION REGISTER

Made by the American Adding Machine Company, 35 South Dearborn Street, Chicago, Illinois. Sold through specially appointed dealers and agents.

A combination of the No. 5 calculating model of the American Adding Machine and a base cash drawer cabinet. Both machine and base are finished in mahogany. It embodies the same features as the adding machine described in the catalog section, except that locks are provided to prevent the taking of a total and the reading of the accumulated totals in the dials by unauthorized persons. The cash drawer opens each time the handle is operated. Keyboards can be equipped to add individual amounts of three figures on each side, providing two totals, of four figures each, such as cash and charge sales, etc.



## AMERICAN CALCULATOR COMBINATION REGISTER—continued

### Models and Prices

Model No. 5-D, 7 adding columns, 7 total columns. Choice of (No. 1) regular adding machine keyboard, (No. 2) dollars and cents keyboard or (No. 3) split keyboard, dollars and cents.....$64.00

## CERTIGRAPH

Made by The Certigraph Company (successors to The Receipting Register Company), 612 Second National Bank Building, Cincinnati, Ohio. Sold direct and through their own salesmen.

A device providing a means of printing the amount, date and clerks number on an inserted sales slip, and retaining a permanent detailed printed record of all transactions on a tally roll locked in the machine.



The certifying mechanism contains an operating board, arranged in columns, with sliding set-up levers. There are four columns for registering clerk's or account numbers, three for dates and five for amounts. A cash drawer operates each time a transaction is registered.

The system is intended to protect against negligence or dishonesty in handling cash transactions, by enforcing correct records, through the receipting of cash issued sales slip. There is no adding mechanism.

### Models and Prices

Model No. 500, as above described, with cash drawer .....$100.00

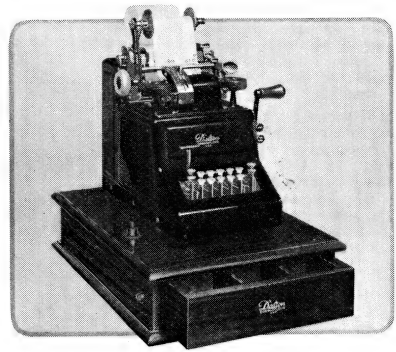
*Additional uses for old machines may be learned by reading the descriptions of the various makes and models.*

## DALTON

Made by the Dalton Adding Machine Company, 263 Beach Street, Norwood, Cincinnati, Ohio. Sold by their own sales force.

A combination of a Dalton Little Giant Series Super Model adding and listing machine with an automatic cash drawer.

The adding machine unit embodies all the standard features of the Little Giant Series Super Models (described on page 41), and the following additional equipment:



A two position, semi-automatic shuttle carriage taking paper up to 6″ wide; single word printing mechanism (for description and illustration see page 39), with index plate stamped to indicate four clerks' letters, eight department letters and designations for paid out, received on account and charge transactions. Automatic paper rewind is driven by belt from platen shaft.

Made in two types:

**Regular Type:** Single items may be registered and the total retained to the end of the day or other business period. The record tape may be torn off and given to the customer or rewound and retained. The two positions of the carriage allow segregation into separate columns, of such items as cash, charge, etc.

**Detail Record Type:** Has a carriage with a split platen and carries two detail strips. Separate items are registered and printed on the right-hand tape, and when ready to take the total, the carriage is shifted by a conveniently placed lever bringing the second tape into printing position. A sub-total is taken and the carriage automatically moves back into position to print the total below the items on the first tape, which is then torn off and given to the customer. The left hand tape is rewound on a spool as a permanent record of all transactions to be added at the close of the day's business. The grand total of accumulated sales is not retained.

The tape on which the customers receipt is printed may be used also, at any time, for straight adding machine work.

When equipped with dual word printing device, a wide range of special designating characters is afforded, making possible the use of either type machine for producing customers' statements and similar forms.

The standard cash drawer is genuine black walnut; oak or mahogany will be furnished if desired. Equipped with normalizing key to disconnect machine from cash drawer if desired.

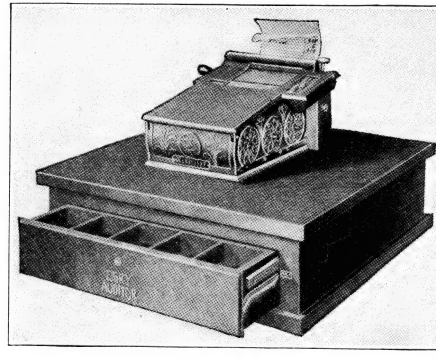
### Models and Prices

| | With Cash Drawer | | Without Cash Drawer | |
|---|---|---|---|---|
| | 7 Columns | 6 Columns | 7 Columns | 6 Columns |
| Regular Type, with 6″ carriage | $315.00 | $265.00 | $275.00 | $225.00 |
| Detail Record Type | 355.00 | 305.00 | 315.00 | 265.00 |

## EGRY AUDITOR

Made by the Egry Register Company, Dayton, Ohio. Sold through their own sales force.

A combination of an Egry Autographic Register with a cash drawer cabinet. (For description of the autographic registers, see section Autographic Registers.)



Some special models of autographic registers have been developed for use with a cash drawer:

**Optional Receipt Model** is equipped to issue receipts or not, according to the nature of the transaction involved. In every instance, prior to a receipt being issued, a record must be made, to register on the record strip inside the machine, before the drawer can be opened. The top or writing plate of the autographic register unit is provided with two openings. The larger one provides for writing a receipt form, measuring 4-5/16 inches in width by 5 inches long. To the left of this opening is a smaller aperture under which runs a section, two inches wide of the summary or detail strip, which also extends under the receipt form.

When it is not desired to issue a receipt, a one line record of the transaction is made through the smaller opening, on the detail strip direct, which automatically moves forward for the next item when the handle is operated to open the drawer.

When a receipt is required, one turn of the handle issues one printed and one unprinted receipt and records, as above described, on the summary record.

The lower portion of the receipt is designed for entering items to summarize or distribute the items entered on the receipt, the record appearing as one line entries in parallel columns on the detail strip, rewound in the machine, in convenient form for totaling at the end of the day's business.

**The Summary Model** provides for issuing a 3x3⅝ inch receipt, and by means of an 8½ inch summary record sheet, which is rewound in the machine, one line records for extensions, distribution, etc., may be made through an extended aperture in the writing table directly below the receipt. One or two copies of the receipt may be issued as required.

The cash drawer and cabinet are of re-enforced steel, finished in oak, mahogany or walnut. The till is removable. The regular equipment includes a counter, set in the face of the cabinet above the drawer, to count automatically the number of times the drawer has been opened.

All models may be equipped with a No-Sale key, controlling a mechanism to open the drawer without registering a transaction. This mechanism is equipped with a lock, making it impossible to open the drawer until a record is made, so that the No-Sale feature may be optional with the user.

## EGRY AUDITOR—continued

### Models and Prices

Single drawer models all have the same size cash drawer and are regularly made in ten different models, differing according to the autographic register unit used. Prices range from $150.00 to $195.00.

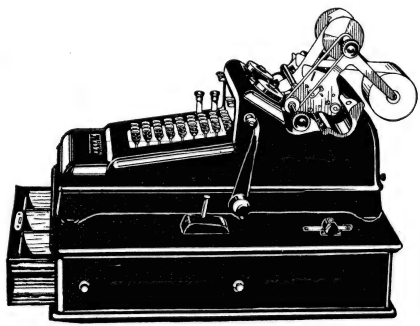
Price is also influenced somewhat by minor changes or modifications made to suit the special requirements of the business with which the equipment is to be used.

Multiple drawer models are also constructed on special order.

## INDIANA CASH DRAWER

Made by the Indiana Cash Drawer Company, Shelbyville, Indiana. Sold direct to users and through specially appointed dealers.

Indiana cash drawers are made for use in connection with Burroughs and several other types of adding machines to form combination registers.



**A rewind device** especially adapted for the adding machine with which it is to be used, provides for the automatic rewinding of the paper tape as each item is registered. It attaches to the carriage of the adding machine and is driven by a rubber belt from the platen shaft.

The drawer and cabinet are made of wood, and equipped with a plunger mechanism actuated by the downward pull of the handle of the adding machine, to automatically open the cash drawer as each item or sale is registered. A transaction counter counts automatically, the number of times the drawer is opened. A positive lock on the front of the drawer is provided.

No connections are necessary; the adding machine is simply placed on top of the cash drawer cabinet, and is available for regular adding machine work at any time.

### Models and Prices

Cash drawer only, in oak or mahogany finish ..... $50.00

Rewind attachment ..... 17.50

Transaction counter ..... 7.50

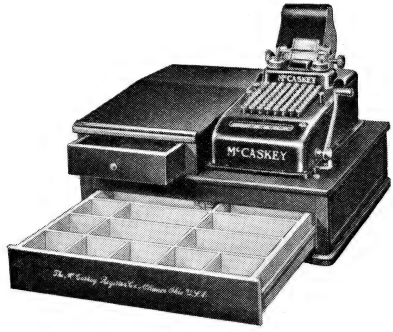
Four-In-One Cabinet, consisting of a cabinet, providing an adding machine stand, having a cash drawer, opened automatically from the handle of the adding machine, a credit file drawer and a letter file drawer. Oak veneer ..... 75.00

Mahogany veneer ..... 85.00

## McCASKEY

Made by the McCaskey Register Company, Alliance, Ohio. Sold by their own sales force operating throughout the country.

A combination of a Victor adding machine, adapted and equipped for cash register and sales classification work, and a cash drawer cabinet. Made in several styles of keyboards and widths of cash drawers.




The keyboard contains eight rows of keys, divided into two sections. The right hand section is used for setting up and registering amounts of each transaction. The left hand section comprises one or more rows of keys, marked with letters or figures to register the clerk's initial and department number in connection with each transaction.

A model is also made with a full numeral keyboard, split between the fourth and fifth columns to add two separate columns, such as debits and credits, independently of each other, each with a totaling and listing capacity of four columns; or if desired, account numbers may be registered in the left hand section in connection with amounts in the right hand section.

When the operating handle is pulled, the record of the sale (symbols for clerk and/or department, and the amount) is registered on the tape, with a space between the clerk or department symbols and the printed amount, and the cash drawer opens automatically. The tape is rewound on a spool at the top of the machine, driven by a belt from the platen shaft. A detachable housing, held in place by thumb screws, is supplied to protect the rewound tape from the view and interference of customers.

The accumulated totals of sales are shown in total dials below the keyboard. A shutter is provided and may be closed whenever it is desired to keep the readings of totals secret. The shutter may be locked, as may the total key to prevent the taking of a total or the clearing of the machine by any but authorized persons. The cash drawer is equipped with a positive lock.

Light metal slip holders are attached to the equipment through which the record tape is threaded, so that sales slips can be inserted before the platen of the machine and a total for auditing registered at the bottom of the slip. This feature is used principally in connection with the McCaskey Credit Register (for complete description, see section Credit Registers).

The keyboard is flexible to allow of correcting an error in each column by depressing any other key. The total key serves as a general keyboard correction key. Other control keys are a repeat key and non-add keys.

## McCASKEY—continued
### Models and Prices

| Style No. | Registering and Adding Capacity | Clerk's Columns | Dept. Columns | | Price |
|---|---|---|---|---|---|
| B-1 | 7 columns | 1 | None | Narrow cash drawer | $185.00 |
| B-2 | 6 columns | 1 | 1 | Narrow cash drawer | 185.00 |
| B-3 | 8 columns | *None | None | Narrow cash drawer | 185.00 |
| BB-1 | 7 columns | 1 | None | Wide cash drawer | 225.00 |
| BB-2 | 6 columns | 1 | 1 | Wide cash drawer | 225.00 |
| BB-3 | 8 columns | *None | None | Wide cash drawer | 225.00 |

*Divided keyboard models, having four columns on each side for adding two sets of amounts and accumulating totals of each.

Combination units are also made comprising a McCaskey Credit Register mounted on a separate drawer above the cash register unit.

Model C-1, combination of Model B-1 Combination Register and a 60-account Credit Register ..... $270.00

Model C-2, combination of Model B-2 Combination Register and a 60-account Credit Register ..... 270.00

Model C-3, combination of Model B-3 Combination Register and a 60-account Credit Register ..... 270.00

Model CC-1, combination of Model BB-1 Combination Register and a 60-account Credit Register ..... 290.00

Model CC-2, combination of Model BB-2 Combination Register and a 60-account Credit Register ..... 290.00

Model CC-3, combination of Model BB-3 Combination Register and a 60-account Credit Register ..... 290.00

Note: All the above prices are for cash drawer combinations finished in oak with black enamel adding unit. Add for ebony finish throughout, $10.00 per unit; for mahogany finish throughout, add $20.00 per unit.

## MORRIS CASH AND CREDIT REGISTER

Made by the Morris Cash & Credit Register Company. Offices, Council Bluffs, Iowa. Sold through their own sales force.

This device of distinctive construction, combines the functions of an autographic register with a series of four ticket issuing devices operating in combination with a cash drawer. There is no adding mechanism.

Distinctively colored tickets or receipts, representing the four different kinds of transactions ("cash," "received on account," "charge," or "paid out") are contained in separate rolls in the machine, and through apertures in the top surface of the register, one of each kind is exhibited. By making a written record of the amount of the transaction in the space provided on the receipt, a carbon copy is made on the master tally roll, which is retained in the machine.



## MORRIS CASH AND CREDIT REGISTER—continued

This master roll is designed to afford a daily analysis of all transactions. Amounts as they are written on the different transaction receipts are automatically placed in column formation on the master record for easy copying at the close of business. An autographic device also allows for writing customers' names or other data direct on the master roll to appear opposite amount of the transaction.

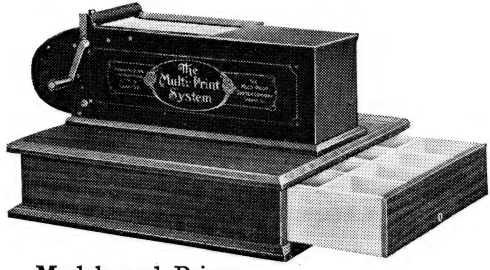
A lock operated by the act of writing on the memorandum section of the paper roll, allows the receipt ticket (which has been selected by the writing on it of the amount of the transaction) to be ejected and releases the operating handle allowing the cash drawer to be opened. A feature of the machine is that forced records of the nature and amount of each transaction are provided through the necessity of making the record before a receipt can be issued or the cash drawer opened.

One model only. Price .....$198.00

## MULTI-PRINT CASH RECORDER

Made by the Multi-Print System Company, Incorporated. Factory, Neenah, Wisconsin. Sales department, Transportation Building, Chicago, Illinois.

A Multi-Print autographic register mounted on a wooden cash drawer. Drawer opens automatically only when a ticket is issued. (For description of Autographic Register Unit see section "Autographic Registers").




### Models and Prices

No. 1 with autographic register, ticket 4⅛" wide, any length to 9"..$ 80.00
No. 2 with autographic register, ticket 5½" wide, any length to 9".. 100.00
No. 3 with autographic register, ticket 8¼" wide, any length to 9".. 115.00

## STANDARD KANT-SLIP

Made by The Standard Register Company, Dayton, Ohio. Sold through branch offices and salesmen in principal cities throughout the country.

A combination of any size of Standard Kant-Slip Autographic Register, Style SC, SRC or TC, with steel cash drawer. (For description of autographic register unit, see section "Autographic Registers"). Provided with a lock and key so that the drawer cannot be opened until the register handle is turned and sheet issued. The cash drawer including the register, measures 24" long, 21" wide, and 5¾" high over all; it has five coin and two slug or extra coin compartments and three bill compartments with bill weights, and a compartment for holding sales checks or other forms.

Drawer cabinet is steel with wood till. A drawer release can be added if desired.

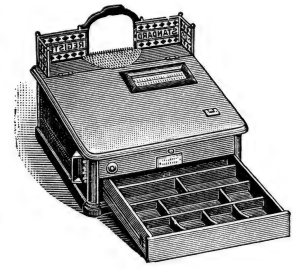
### Models and Prices

Cash drawer can be added to any size of any models, SC, SRC or TC, Standard Autographic Register, at an additional price of..$65.00
Extra, for automatic drawer release, providing for opening drawer without turning the handle..... 7.50

## STANDARD RECORDING REGISTER

Made by the Standard Recording Company, North Manchester, Indiana. Sold direct.

A cash drawer operating in conjunction with an autographic device, consisting of a roll strip of paper on which one line records of cash or charge transactions, etc., are made through a slot in the top of the cash drawer cabinet.



The cash drawer is opened by a combination lock, (situated on the left side of the register), having four pressure keys, possible of sixteen different combinations. Upon pressing the keys to make the correct combination, the drawer opens automatically and moves the paper or record sheet one space forward under a glass panel, where it remains visible until the next item is recorded. If the drawer is opened without an entry being made, a blank space is left on the record sheet. The drawer and cabinet are made of oak.

### Models and Prices

Model No. 1, writing line 6¼ inches.....$50.00
Model No. 2, same as No. 1 but with rail and coin mat..... 53.00
Model No. 8, same as No. 1 but with 8¾" writing line..... 60.00
Model No. 9, same as No. 2 but with 8¾" writing line..... 63.00

## SUNDSTRAND

Made by the Sundstrand Adding Machine Company, Rockford, Illinois. Sold by specially appointed dealers and their sales force throughout the country.

A combination of the Sundstrand adding machine, (described on pages 56 to 58), specially adapted and equipped for cash register and sales classifying requirements, with a cash drawer cabinet.

Besides including all the features and equipment of regular adding machine models (except subtractor models), the adding machine unit includes the following special equipment:

A slideboard located to the left of the keyboard, contains (according to the model), two or three columns, equipped with adjustable levers for the setting up and registering of characters representing clerks initials, department numbers and the nature of the transaction, (Charge, Received-on-Account, Paid-out, Goods Returned and No-sale). Special designations are furnished to suit the requirements of the individual user.

Forced registration of all transactions is provided. The designating indicating levers must be set before the cash drawer can be opened.

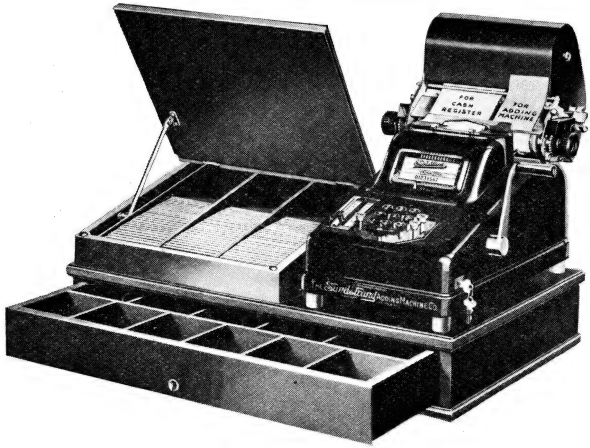
The amounts of items registered in connection with the designation, Paid-Out, Goods Returned or Charge, do not add in the total counter.

The printing of symbols does not reduce the adding capacity. A rewind device is provided to rewind the cash register detail strip on a spool at the top of the machine, which is protected from the view and interference of customers, by a removable steel housing.

Locks are provided to prevent the taking of a total or the clearing of the machine except by authorized persons.

The cash drawer cabinet and cash drawer are of wood, finished in oak or mahogany. All models are hand operated.

## SUNDSTRAND—continued




## Models, Descriptions and Prices

**The Double Action Model,** embodies all of the features above described, and is equipped with a movable carriage having a split platen to carry two paper tapes, one of which (the one on the left side) is used as the cash register tape and is rewound as used, on the take-up reel.

When it is desired to do straight adding machine work, a total is taken on the cash register tape and the carriage is moved to the left, bringing the second tape into position for listing the added items. The paper feed on each side is independent of the other, thus, when the cash register tape is being used, the adding machine tape does not move, and when the adding machine tape is being used, the cash register tape does not move.

When it is desired to resume cash register work, the carriage is moved again to the right, bringing the cash register tape into position. The total of accumulated sales previously recorded on the tape, is again registered as the first transaction.

Prices: Two-Row Character Printing Models

| Old Model No. | New Model No. | Characters | Adding Capacity | Keyboard | Carriage Size | Price |
|---|---|---|---|---|---|---|
| A-S-T | 602-22 | 2 Rows | 6-Cols. | Stripped | 7″ | $215.00 |
| B-S-T | 702-22 | 2 Rows | 7-Cols. | Stripped | 7″ | 240.00 |
| B-T | 702-21 | 2 Rows | 7-Cols. | Full | 7″ | 265.00 |
| H-S-T | 802-22 | 2 Rows | 8-Cols. | Stripped | 7″ | 265.00 |
| H-T | 802-21 | 2 Rows | 8-Cols. | Full | 7″ | 290.00 |

The above prices include automatic rewind, total lock, forced registration feature, automatic non-add on Paid-out, Goods Returned and Charge transactions, and one of the following cash drawers:

No. 10, large size with desk, oak finish.
No. 11, large size with desk, mahogany finish.
No. 30, small cash drawer, oak finish.
No. 31, †small cash drawer, mahogany finish.

## SUNDSTRAND—continued

No. 50, *large size, for under counter use, oak finish.
No. 51, *large size, for under counter use, mahogany finish.

† When this cash drawer is supplied, a deduction of $5.00 is made.

* When these cash drawers are used, the adding machine is positioned on, and the drawer under, the counter.

When equipped with a 5" carriage, for $2\frac{5}{16}$" paper, deduct $15.00 from above prices.

### Prices: Three-Row Character Printing Models

The standard arrangement of the slideboard when equipped with three columns or slides, provides for the use of the register at the end of the month to produce statements. Abbreviations are provided for months and numeral combinations for dates from 1 to 31, including also abbreviations PD (Paid-out), GR (Goods Returned), DR (Debit), CR (Credit), BL (Balance), AC (On Account).

| Old Model No. | New Model No. | Characters | Adding Capacity | Keyboard | Carriage Size | Price |
|---|---|---|---|---|---|---|
| A-S-T | 603-22 | 3 Rows | 6-Cols. | Stripped | 5" | $225.00 |
| A-T | 603-21 | 3 Rows | 6-Cols. | Full | 5" | 250.00 |
| A-S-T | 603Y-22 | 3 Rows | 6-Cols. | Stripped | 5" | 225.00 |
| A-T | 603Y-21 | 3 Rows | 6-Cols. | Full | 5" | 250.00 |

The above models are regularly equipped with 3-row statement slides as previously described and with forced registration, automatic non-add feature and choice of cash drawers as above described.

**Cash and Carry (XX) Model,** has two detail strips. On one is printed an itemized total receipt for the customer showing the amount of each item and the accumulated total. When the total of the customer's receipt is printed, a duplicate total is also printed on the second tape. This is accomplished by a double printing mechanism, which automatically brings a duplicate set of type bars into position to print the total on a parallel tape when the total on the customer's tape is printed.

The customer's tape, when ejected, is torn off and the total of each transaction is rewound on the permanent record tape in the machine. The total of all transactions is accumulated throughout the day and may be printed at the close of business or at any other time. These models are equipped with rewind and housing as previously described for other models.

Model XX, 4 figure customer total, 6 figure store total, price.....$210.00

The above price includes a 5" carriage, automatic rewind and jump total feed, two total keys (one for customer's total and one for store total), a repeat key equipped with total lock and choice of cash drawers as described for previous models.

### Attachments For All Models

Customer Counter, counts every handle pull, or if desired, every **total taken; capacity 5 columns; non-set back model,** extra.....$10.00

Veeder Counter, attached to carriage, counts every handle pull; can be set back to zero, extra..... 15.00

Jump Total Feature; paper feeds forward extra length when total is taken, sufficient to bring the total just above the tearing plate. Furnished with single paper feed only and when used, carriage is not movable. Can be furnished on 5" carriage only, extra.... 10.00

Grand Total Lock, extra..... 10.00
Sub-total Lock, extra..... 10.00

## UNITED (UARCO) HAMILTON

Sold in the West by the United Autographic Register Company, 2316 West 43rd St., Chicago, Illinois. In the East by the Hamilton Autographic Register Company, Hamilton, Ohio.



A combination of a United (Uarco) Hamilton Autographic Register, Model S, mounted on a cash drawer. (For description of Autographic Register unit see section "Autographic Registers").

The cash drawer opens when the crank of the Autographic Register is revolved to extract forms written by hand. May be equipped with automatic counter to record each opening of the cash drawer. The cabinet is made of wood or steel with wood drawer equipped with positive lock.

### Models and Prices

Prices for complete equipment range from $105.00 to $112.50, according to size of Autographic Register unit.

*Advertisements in any medium are carefully worded to induce the buying urge. The descriptions you are now reading are to provide comparative knowledge—not to make up your mind for you.*

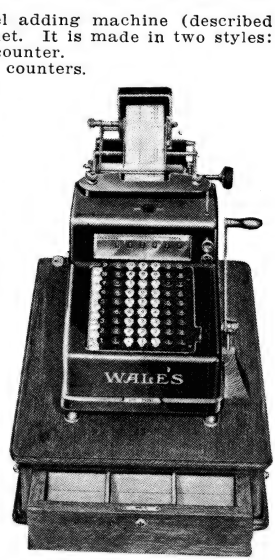
## WALES CASHIER

Made by the Wales Adding Machine Company. General offices and factory, Wilkesbarre, Pennsylvania. Sold through their own salesmen and dealers.

A combination of the Wales portable model adding machine (described on pages 62 and 63) with a cash drawer cabinet. It is made in two styles:

1—Registers having a single total adding counter.

2—Duplex models having two total adding counters.




The adding machine unit embodies the regular features of the portable model, and in addition, has the following special features to adapt the machine for sales classification work: automatic rewind device on the carriage for rewinding the tape on a spool inside the machine after it is printed; 9 clerk or department designation keys, composing the extreme left hand column; classification plate, an attachment to the keyboard at the left of the last left hand column providing an index for the department or clerk designation; Yale lock on the left hand side to prevent the taking of the total by an unauthorized person.

**Duplex models,** in addition to the above features, have two sets of adding counters and a double ribbon mechanism for printing double wound rolls of paper. They provide a customer's detailed and totaled receipt showing the department designation and the amount of each item, the clerk's initial and the total of all items. If desired, one tape may be supplied specially imprinted with the name or advertisement of the proprietor and consecutively numbered, to show at a glance the number of items of each transaction. One adding counter accumulates the total of individual items; the second set carries the grand total of all transactions. The grand total may be printed at any time by authorized persons by unlocking the control key. A duplicate detail strip of all items and of all totals is rewound into the machine and is protected by lock and key.

By the Non-add key, Paid-out and Charge items can be recorded and not added; Charge items can also be recorded by retaining the customer's receipt in the drawer after the name has been written on it.

The cash drawer and cabinet are finished in oak or mahogany. On single total machines, it is opened automatically by each pull of the adding machine handle; on Duplex machines, it opens only when the total is taken.

### Models and Prices

**Model**

No. 103, single adding counter, 6 item columns, one column for designating clerk or department numbers; totaling capacity 6 columns ..... $235.00

No. 105, Duplex. Two adding counters, 6 item columns, one column for designating clerk or department numbers; totaling capacity 6 columns; issues itemized and totaled receipt, accumulates grand total of all business during day..... 285.00

Prices shown above are for regular cash drawer, four compartments wide.

For narrow (three compartments) cash drawer, deduct..... 10.00

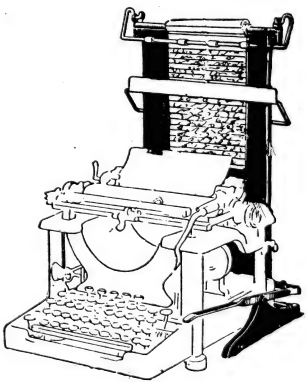
Style B (five compartments) cash drawer has a shelf which can be placed to right or left of machine; top can be lifted to afford storage space for paper, etc. Additional..... 25.00

# Copy Holders

## LINE-A-TIME

A device for holding copy at a convenient position and range for reading by the stenographer, as notes are transcribed, or when copying from typewritten, printed or written forms.

The device is positioned at the back of the typewriter and is slipped over the head of a small screw which is fastened in the desk, (thus making it stationary but not permanently fixed), and holds in a vertical position the copy book, sheet, or other form. A line bar indicates the line being written. As the typing of each line of notes or copy is completed, a touch of a lever at the right side of the typewriter moves the entire holder upward, (except the line bar which remains fixed), one line at a time.



The advantage claimed as against the ordinary method of placing the copy to right or left of the machine, are that correct sitting posture of the operator is induced; all notes or copy are read always from the same point at just the correct elevation—the combination providing less strain on the operator. Special attachments are made for billing and bookkeeping machine models.

A device may be attached to any model to hold a book in an open position while being copied. Maximum size of book (opened) may be 10⅜" high by 18" wide; minimum size, 7¾" high by 8" wide.

### Models and Prices

Model 12, for note book and sheets up to 12" wide..... $18.00
Model 16, for mailing lists and sheets up to 16" wide..... 20.00
Model 18, for sheets up to 18" wide..... 21.00
Model 20, for sheets up to 20" wide..... 23.00
Model 25, for inventory and sheets up to 25" wide..... 28.00
Model 30, for sheets up to 30" wide..... 31.00
Model 32, for statistical report sheets up to 32" wide..... 35.00

Luminus lens model, with convex magnifying lens, the height of light to scientifically filter out the injurious rays of ordinary one or more lines, (depending on the character of copy) and the width of the entire device; designed to enlarge small characters to the correct focus of the eyes, and equipped with a artificial light.

Statement Model for paper 12" wide..... 50.00
Universal Model for paper 15" wide..... 96.00
Billing and Bookkeeping models are priced from $28.00 to $38.00.
Book holder model, complete..... 40.00

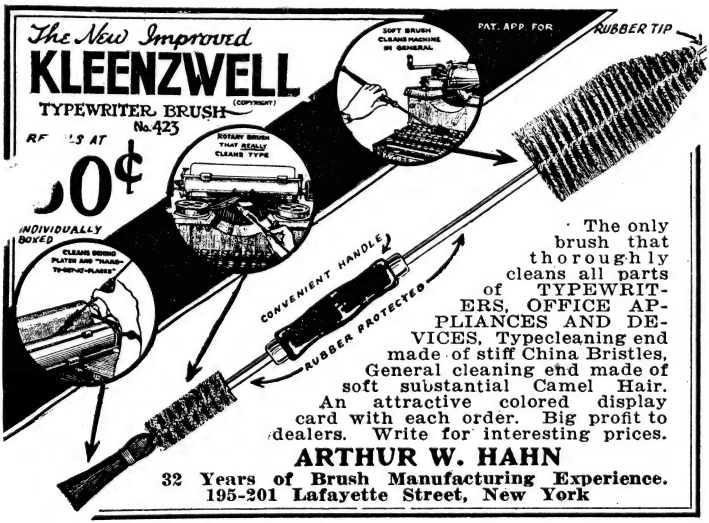
## DROP-A-LINE

Made by the Nielson Supply Company, 810 First National Bank Building, Chicago, Illinois. Sold direct and through specially appointed dealers and agents.

A combination of a typewriter copy holder and line indicator operating through a flexible cable from a button control attached to the typewriter keyboard. Each depression of the operating key, causes the indicator to drop to the next line, automatically pointing out or following the lines or notes to be transcribed from note book, or single sheet forms. Adjustable for one, two or three line typewriter spacing, and for closer spacing such as newspaper print, etc. It may be used at either side or back of the typewriter and is adjustable to direction of light. Easily and quickly attached or removed; when not in use, does not conflict with operation of typewriter.

### Models and Prices

Standard model, 13″ high, 8″ wide, with additional 4″ extension at side ..... $10.00



# Counting Machines

## MATERIAL COUNTING MACHINES

Counting machines, as covered by this section, are scales designed to give an accurate and quick count of commodities, consisting of similar parts or pieces, without the use of tabulated figures, mental calculation, or figuring of any kind. The total count of the contents of any box, barrel, bag, truck or barrow, containing an unknown number of like parts or pieces, can be determined accurately and almost instantly. The accuracy of the count is governed mechanically.

The method is one of weight ratio, scientifically applied and capable of understanding and operating by any ordinary laborer. If desired, the weight of the material handled may also be secured at the same time the count is made.

These devices are made by practically all of the larger scale companies and are designed for counting various classes of manufactured articles and material in process of manufacture, in shipping room, receiving or packing room, storeroom, etc., and for piece work operations, inspection work, inventory work, cost and estimating departments and for any and all places where checking, counting and weighing have to be done.

Each model is constructed with a definite ratio, such as 5 to 1, 20 to 1, 50 to 1, 100 to 1, etc. The principle of operation consists of placing the material to be counted on the weighing platform. A tare beam provides for equalizing the weight of the container to give the net count and weight. A small definite number of pieces of the material to be counted is placed in a small scoop or pan attached to the weight beam. The number of such pieces varies as a standard with the type and ratio of the scale. The small pan is then shifted along the beam until the scale balances. Graduations on the beam denote the exact number of pieces in the quantity weighed.

Example: If 20 pieces (such as screws, bolts, etc.), are placed in the small scoop, and a quantity in a box or barrel placed on the weighing platform, and the beam balanced, the count may be read from the graduation on the beam at the point of suspension of the pan, when the scale balances.

An accurate count may be obtained of pieces weighing as little as 1/ of an ounce. Models usually furnished are graduated to count in u but when desired, special machines are supplied to count by the do. or gross.

## TICKOMETER

Made by the Tickometer Company. General office, 940 Leader Building, Cleveland, Ohio; factory, 1988 East 66th Street, Cleveland, Ohio.

A counting device for counting tickets, coupons, checks or other forms on light paper. Designed principally for use in redemption stations for the counting of profit sharing and premium coupons.

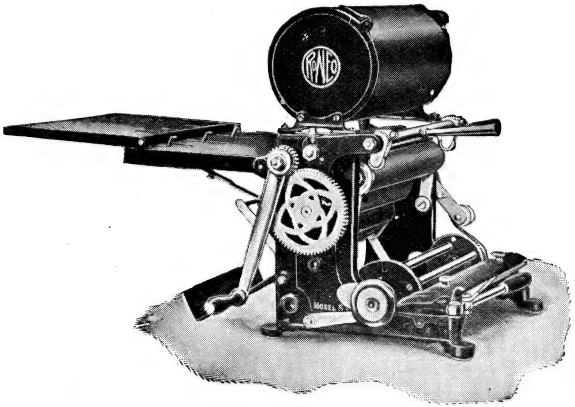
A stack of coupons or tickets are inserted by the operator between adjustable guides and held against a feeding roller which grips the tickets one at a time and feeds them at high speed through the machine into a stacker. Each ticket, as it passes through, is counted on a cyclometer counter which may be set back to zero after each batch or run. It will accommodate varying thicknesses of tickets or coupons or those crumpled or worn. Speed is approximately 350 pieces per minute. It is motor driven.

The device is leased on a rental basis.

# Copying Machines

(See also Photo Copying Machines)

## RONEO LETTER COPIER



Made in England. Sold in the United States by the Roneo Company, 117-119 Leonard Street, New York City.

A device to supplant the screw press and carbon sheets, in making filing copies of letters, statements, etc.

It operates without water and needs no preparation befor use. Facsimile copies are made from the original on a roll of specially prepared (humidified) tissue paper that is sold by the makers. As the crank is operated, the original is carried into the rollers, impressed against the surface of the tissue and ejected into a chute below. The tissue sheet containing the copies is rolled on a spool, from which it can be removed any time and automatically cut into letter size sheets delivered in pad form. All operations are visible.

As many as sixty copies may be taken of one subject, leaving the original as clear, unwrinkled and unblurred as before copied. The speed is 20 to 30 copies per minute according to whether machine is hand or electrically driven.

### Models and Prices

| Model | Description | Price |
|---|---|---|
| No. 1 | Letter size, hand operated | $105.00 |
| No. 2 | Statement size, hand operated | 135.00 |
| | Electrically operated machines, extra | 100.00 |
| | Rolls of copying paper, letter size, each | .80 |

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# Credit Registers

The term "Credit Register", as applied to devices described in this section, seems to be a misnomer. There are as many of these registers or files purchased for use in industrial and professional accounting as there are in retail stores.

The arrangement provides a convenient indexing and filing system for practically any papers or forms of small, uniform size. The following article will give a more comprehensive idea of the many applications of such devices for other than the filing of credit account slips.

## THE CREDIT REGISTER AND "ONE WRITING"

In a sense the name "Credit Register" is misleading. This is true in regard to the fact that it is not a register in the sense that a cash register is a register, and that it does so many services for the merchant in the commercial world and the factory executive in the industrial world, that credit register far from reaches the complete scope of credit register or "One Writing" system duties. In fact, the credit register is but the housing for a simple, time-saving method of keeping accounts and records and keeping them so accessible by visible filing that they are instantly available at any and all times.

### Commercial Systems

The merchant, in whose store a credit register system is in operation, keeps charge accounts posted to the minute at all times without bookkeeping. He maintains the highest rate of account turnover in collections; he satisfies his customers with complete information on accounts at all times and never faces disputes. He eliminates entirely from his business 'forgotten charges', a serious source of loss in any bookkeeping methods; he eliminates further all loss due to errors in posting and re-writing from ledgers to statements. Because of his ability to stop disputes by virtue of his credit register system he is enabled to put a stop to all rebates to customers on accounts. Thus he eliminates time waste and unnecessary expense, keeps minutely informed on his outstanding accounts and has his records always within instant reach.

By the credit register system credit limit is handled automatically in a businesslike manner and 'dead beat' accounts are minimized. Promises to pay on account are checked up with the greatest accuracy and promptness. The merchant is enabled to collect his account when the customer has the money and is able to pay.

The basis of the credit register system for handling charge accounts in the commercial enterprise lies in the convenience of the single, yet permanent entry of each item on a triplicate salesbook, either carbon-backed or single carbon, or as issued by an autographic register. When a purchase is made, the record is written by the clerk on a triplicate sales ticket. He then turns to the credit register and to the customer's compartment, to ascertain the total owing on the account to date. This total is brought forward to a space at the top of the amount column on the sales slip which is marked "Account Forwarded". The amounts of the items most recently purchased are added to the amount carried forward and the total balance owing on the account to the minute, is set down on the slip.

The original slip goes into the customer's compartment in the register, the duplicate is placed on a spindle file for audit at the end

## THE CREDIT REGISTER AND "ONE WRITING"—continued

of the day and the triplicate is given to the customer or tied in with the purchases, so that when the purchases leave the store, the customer is always given a statement of the account balanced to date.

By reference to an alphabetical index, the compartment in the register is instantly located by clerks. The accessibility of the account compartment and the figures showing the balance owing make the handling of a charge account, and the making of a permanent record for the merchant, as rapid a process as the handling of an ordinary cash sale.

When a customer is at first permitted the service of running a charge account, a Credit Limit card, bearing at the top the amount agreed as the limit to be reached on the account at any time, is filled in. This card is placed in the rear of the slips in the compartment, and when that total is reached, or approached, it is brought forward by the individual in charge of auditing the accounts in the register.

Paper clips separating the slips, audit cards placed in front of the compartment, or box files are used to audit the accounts daily so that any errors made in entering the purchase amounts, etc., are caught the day they are made, and corrected. The next slip handed to the customer carries the account corrected to date.

Due cards are provided to be placed in the front of the compartments of customers who have named a date when they would make a payment on account. These cards make possible an effort on the part of the merchant to reach his customer on the very date named as the time when he would have the money with which to make payment. The merchant is therefore insured his share of the payment money available.

Payment on account is handled in the same manner as charges except that when the slips are made out and the "Account Forwarded" amount obtained from the compartment in the register, the amount paid, whether partial or full payment, is subtracted from the amount shown as previously owing, and the total left is that yet unpaid on the account.

Through the information provided both merchant and customer by the means briefly explained in the above paragraphs, the simplicity yet completeness of the "One Writing" service of the credit register system can in part be realized. The merchant is always in a position to accept payment, to stop overbuying, to check promised payments. The customer is allowed to watch the account grow, to know the amount owing always, and, therefore at the time when the wages or salary is paid and he has the money to pay his bills.

To complete a sale by the "One Writing" method and carry the balance forward, it is absolutely necessary to set down all the items to be charged and total the amount. In this way forgotten charges are practically stopped. There is never any transposing of the original figures to a ledger or statement, and the many opportunities for error in that line are checked.

These are all generally accepted sources of loss, any of which are so effectually stopped through "One Writing" and visible filing that the system installation pays for itself within a remarkably short period of time and effects thereafter an increase in the net profits which enriches the business and the owners.

The importance and value of the audit at the end of the day cannot be too strongly emphasized. Twenty minutes a day spent in making an audit secures the ultimate of satisfaction and value in the use of a register and its accompanying systems. If properly audited, every feature of double entry bookkeeping is available in a much more visible, convenient and tangible way than if the records were actually kept in books. Where a regular set of books is kept the register becomes a unit control account, and the totals secured by the audit are posted direct into the control ledgers.

## Industrial Systems

**Stock Records:** Industrially, the "One Writing" and visible filing idea has been applied to the requirements of manufacturers for various control purposes. Forms, in duplicate, triplicate or multicopy arrangement, are used in connection with visible filing equipment for the purpose of gaining control on stock.

Where triplicate forms are used in connection with requisitioning materials from stock, the one copy acts as an identification or travel ticket from stock room to the factory floor; the second copy becomes the inventory record after bringing forward the old balance, deducting the amount shown on the current requisition, and showing the new balance on one and the same copy. When this is filed, the inventory record, with regard to quantity and value, is right up to the minute. The third copy of this requisition becomes the cost department copy for material cost distribution purposes. In the cost department it is filed against the job or order number for which the material has been requisitioned, and having been priced at the same time the inventory is handled, the value of the material is available without any further writing.

**Cost Records:** In connection with costs, productive labor tickets, if used in triplicate, are distributed by using one copy as a notification to the planning and production department of the quantity produced and of the elapsed time of the operation. When this is filed in the visible filing equipment, against the order number and operation, progress made is noted at a glance. The other two copies traveling through the time keeping department are rated, and the one copy then becomes the payroll department record, showing the man's earnings for the elapsed time, indicated on the ticket, and if his previous earnings are brought forward onto the current ticket, and the current ticket added, it will show his total earnings right up to the minute. The third ticket filed in the cost department, against the job or order number, shows the value of the elapsed time on this ticket, and, if previous labor expense incurred is brought forward and the amount added to the current ticket, will show the total labor value on the job. It is also possible to carry forward from ticket to ticket, the burden or overhead rate. Thus it is possible to obtain inventory control, payroll, costs, overhead and production.

**Tool Records:** The idea has also been applied to control on tools. The proposition provides that the workman sign for tools taken out of the tool room. This tool order form is made up in triplicate, and when the tool is given to the workman, he is also given a copy of the tool order, which he has signed, showing the name of the tool with which he is charged. The other two copies of the tool order are cross filed, one against the workman's clock number in the visible file and the other against the tool item number in the same file but in a different position. In the tool item compartment it is also possible to carry an inventory record of the tools, likewise to determine how often a tool has been used in a given period, and in that way ascertain whether or not the tool investment is greater than it should be.

## ADD-INDEX

Made by the Add-Index Corporation, 120 Broadway, New York City. Sold through specially appointed dealers and agents.

A short account credit file contained within a drawer cabinet. Sold principally for use with Add-Index combination registers, described in the section "Combination Registers," or may be used separately.

## ADD INDEX—ontinued

The interior of the drawer is divided into vertical compartments in which are set fibre board leaves hinged at the top so as to allow one leaf to extend a short distance, (approximately ½") below the leaf immediately above it. The extended portion of each leaf is equipped with a transparent celluloid strip, under which may be inserted as an index, the name of the customer, credit memoranda, account number or other data. A portion of the lower right side of each leaf is cut away so that when a sales slip is placed in the pocket created by the position of one leaf over the other, and the total amount of the customer's account is entered on the lower right corner of the sales slip, such total is visible on every account opposite the indexed name, thus affording a convenient arrangement for adding totals of individual accounts to determine the grand totals of all accounts receivable.

The entire file is removable from the drawer without disturbing the accounts, to allow of placing in a safe if desired.

### Prices

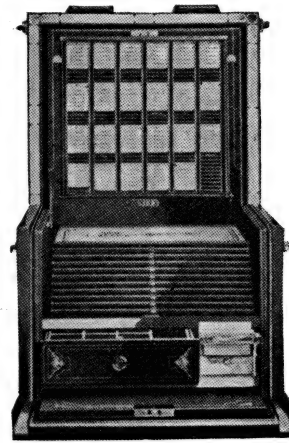
| | |
|---|---|
| One drawer holding 100 accounts | $100.00 |
| Two drawers holding 200 accounts | 150.00 |
| Three drawers holding 300 accounts | 200.00 |
| Four drawers holding 400 accounts | 250.00 |
| Five drawers holding 500 accounts | 300.00 |

100 duplicating sales books are furnished with each outfit.

## CHAMPION COMPLETE ACCOUNTANT

Made by The Champion Register Company, East 70th and Colfax Avenue, Cleveland, Ohio. Sold through their own salesmen.

The Champion Complete Accountant is of all metal construction, combining a Credit Account System, a Cash System, a Filing System, a Recording Register and a Safe.



It comprises a number (varying according to the size of the model) of hinged metal leaves, indexed and divided into compartments, fitted with spring holders for filing sales slips. Each charge account is assigned a permanent division on a leaf. A variety of styles of sales slips are afforded to fit the requirements of any business or system.

A compartment cash drawer is part of the regular equipment.

An inbuilt recording register designed for hand written memorandum records, uses a roll of paper ruled into columns, and an index for classifying transactions.

Fireproof and non-fireproof models are made. When fireproof models are closed, the cabinet forms a square, rigid, fireproof, all-steel safe, fitted with lock and key.

### Models and Prices

Made in 165 different styles, sizes and models, ranging in price from $74.50 to $500, depending upon the model and number of accounts.

## CHAMPION COMPLETE ACCOUNTANT—continued

Model A, All steel fireproof model, is equipped with Money Drawer and Recorder.

Model B, Is the same as Model A with the exception of a File Drawer in place of the Money Drawer and Recorder.

Model C, Is the same as Model A with a File Drawer and Money Drawer but no Recorder.

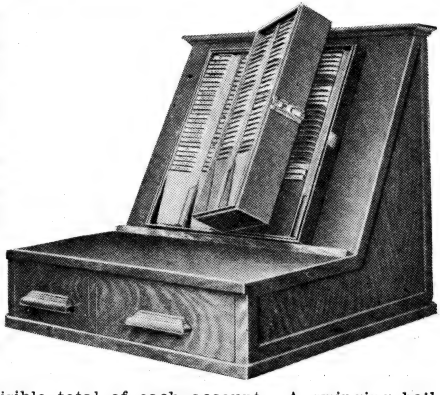
| Size | Description | Model A | Model B | Model C |
|---|---|---|---|---|
| 100 | 100 regular and 120 miscellaneous accounts.. | $298.00 | $263.00 | $278.00 |
| 200 | 200 regular and 120 miscellaneous accounts.. | 383.00 | 348.00 | 363.00 |
| 380 | 380 regular and 120 miscellaneous accounts.. | 528.00 | 493.00 | 508.00 |

Special Model is equipped with money drawer and recorder, accommodates 120 miscellaneous accounts, non-fireproof..... 74.50

## SYSTEMAT CREDIT SYSTEMS

Made by the American Sales Book Company, Limited. Executive Offices, Elmira, New York. Sold east of the Rocky Mountains by their own specially appointed salesmen. West of the Rocky Mountains by the Pacific Manifolding Book Company, Emeryville, California.

A credit filing system designed like a book. The main sections comprise two steel compartments, hinged together, and provided with pockets arranged alphabetically in vertical columns of twenty-five each. The name of the customer is indexed on a specially designed card which provides a ruled form on one side, to enter summary records of the customer's account, and on the other side, a credit reference record.



Sales slips, either from sales books or from autographic registers are filed in the pockets behind these cards. Standard sizes accommodate sales slips 3⅝" wide, and any standard length from 4¾" to 7¾". The usual printed form of the sales slips provides a visible total of each account. A swinging bail, attached to each column, may be positioned to form a shutter or blind over the totals if desired, in which position it also acts to hold immovable, all pockets in the column. The arrangement provides for visualizing 150 accounts at one time.

Any kind or form of sales slips may be used to conform to any system now in use. Intermediate sections, each holding 150 accounts, may be supplied and attached at any time. The design provides for the closing of the register when not in use, and placing it in a safe.

### Models and Prices

Prices range from $48.00 to $170.00 depending on the number of accounts to be handled in a system. The regular sizes accommodate from 80 to 450 accounts.

A combination desk and rest, is a separate unit. It is made of oak and supplied with two filing drawers. Prices range from $7.50 to $35.00, depending on style and size.

## McCASKEY

Made by the McCaskey Register Company. General office and factories, Alliance, Ohio. Sold by their own sales force through branch offices located in principal cities.



McCaskey registers are made in both wood and metal cabinets, the latter being constructed like a safe, having inner and outer walls of cold drawn steel between which is a filler of composition to provide fire resisting qualities.

The construction embodies a number of metal leaves or panels hinged to be lifted from horizontal to vertical position when the cabinet is open. Each panel is divided into compartments, separated by metal cleets and having clip springs which clamp the sales slips firmly into position when they are inserted. Finder numbers on the leaves and clip springs make it possible to locate any compartment after determining the one desired, by use of an interchangeable alphabetical index on the first leaf.

The number of accounts which each register will hold is variable, ranging from a minimum of 130 to a maximum of 330 accounts, dependent on the number of leaves and the size of the sales slip used.

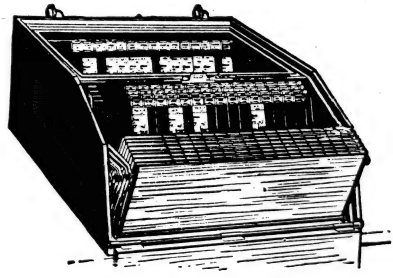
**The safe register** cabinet, which is the one illustrated herewith, is the more popular of the two types and has practically entirely superseded the wood cabinet, extensively used in the past. The safe register cabinet closes by pulling down the upper portion over the lower and locking.

### Safe Cabinet Models and Prices

| Style No. | Slip Size | Accounts | Price |
|---|---|---|---|
| S. R. 102 | 3⅝"x3⅜" | 180 minimum | $235.00 |
| | | 420 maximum | 372.00 |
| S. R. 133 | 3⅜"x5⅛" | 130 minimum | 195.00 |
| | | 330 maximum | 320.00 |
| S. R. 135 | 3⅝"x5¾" | 130 minimum | 205.00 |
| | | 310 maximum | 327.00 |
| S. R. 146 | 4"x6" | 136 minimum | 224.30 |
| | | 216 maximum | 282.80 |

## NATIONAL

Made by the National Cash Register Company, Dayton, Ohio. Sold by their own sales force through branch offices located in principal cities.



These credit registers are all-metal files made in several styles and models. The construction is fire resisting, the sides and cover being of two thicknesses of steel plate with insulation between.

All models are equipped with a locked cover which is hinged to fold in sections, and lie part at the front and part at the rear when the register is in use.

The sales slips are filed in pockets, formed by individual steel leaves hinged to fold, one part way over the other, exposing half (the right side) of the sales slip for the reading of amounts and totals, for auditing purposes. The individual account leaves are mounted in groups of 7 to 14 (according to the size of the slip used) on partition leaves or panels, which are movable to provide access to the accounts filed on preceding or subsequent leaves. Each individual account leaf or compartment has a clip at the top for the insertion of an index slip, which may bear the name or number of the customer's account.

Two distinct types are made:

### Protected Type

This type is divided into two sections.

The rear section, called the permanent section, or protected file, is covered by a glass door equipped with a lock and is distinguished from

The current section, comprising the front part of the register, which is used for filing the sales slips of each current day's business.

Both sections are equipped with partition leaves having individual account compartments. Each customer is assigned a compartment in both the current and permanent sections of the file, and the position of such accounts in the permanent file is in exact duplicate and occupies the same relative position as those in the current file. The leaves are connected from one compartment to the other by means of rods.

When an account is located by moving a leaf in the current file, a corresponding leaf is moved automatically in the permanent file, so that the clerk may see through the glass door of the locked compartment the total of the customer's account, up to and including the last purchase.

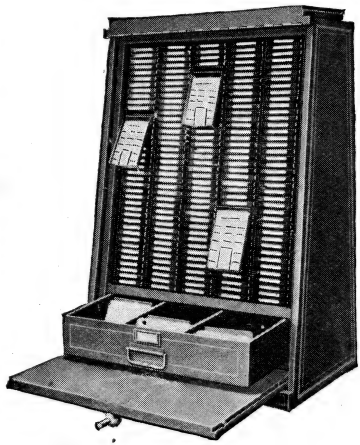
The principle of the two-compartment design is to provide a locked compartment against the removal of the accumulated slips of any account by any but the proprietor or other authorized persons. The sales slips of only one day are carried in the forward compartment, all previous slips are filed in the rear compartment. Transfer is made by the proprietor at the end of each day's business. Should a customer desire to settle his account during the absence of the proprietor, the last total may be seen in the permanent file through the glass door, making it unnecessary for the clerk to actually handle the sales slips.

## UARCO ACCOUNTANT

Made by the United Autographic Register Company, 2316 West 43rd Street, Chicago, Illinois. Sold through their own specially appointed salesmen and dealers.

A vertical type of credit register of fire resisting construction: steel shell lined with asbestos; designed to hold sales slips issued by the Uarco Autographic Registers. (For description see section "Autographic Registers.") The slips for each customer's account are held in tray receptacles, arranged in vertical columns, each entirely independent of the other. The customers' names appear on the front of each tray in self-indexing alphabetical order. The trays will also accommodate sales books 3⅜x5½ inches if their use is desired instead of the Autographic forms.

A drawer at the bottom is partitioned for filing miscellaneous accounts or data and for use in accommodating accounts beyond the capacity of the number of trays.



### Models and Prices

| Sizes | AR-1 | AR-2 | AR-3 | AR-4 | AR-5 | AR-6 |
|---|---|---|---|---|---|---|
| No. of Accounts | 100 | 200 | 300 | 400 | 500 | 600 |
| Price | $175.00 | $260.00 | $325.00 | $500.00 | $555.00 | $600.00 |
| Height | 24″ | 36″ | 38″ | 36″ | 38″ | 38″ |

## NATIONAL—continued

### Models and Prices

| Model | Width of Sales Slips | Number of Customers' Accounts | Number of Extra Compartments | Price |
|---|---|---|---|---|
| 1 | 3⅝ | 100 | 20 | $150.00 |
| 2 | 3⅝ | 154 | 26 | 225.00 |
| 3 | 4¾ | 88 | 20 | 150.00 |
| 4 | 4¾ | 142 | 26 | 225.00 |
| 5 | 5¾ | 60 | 20 | 150.00 |
| 6 | 5¾ | 104 | 26 | 225.00 |
| 7 | 6¾ | 50 | 20 | 150.00 |
| 8 | 6¾ | 94 | 26 | 225.00 |

### Unprotected Type

This type has all of the leaves arranged in a single compartment and is not equipped with a glass cover. It is made in different models for the filing of detached sales slips or whole books of sales slips for each account.

## NATIONAL—continued

Models and Prices

| Model | Width of Sales Slips | Number of Customers' Accounts | Number of Leaves | Price | Price for each extra leaf holding additional accounts |
|---|---|---|---|---|---|
| 9(10) | 3 5/8 | 80 | 20 | $110.00 | $4.00 for 10 accounts |
| 10(18) | 3 5/8 | 244 | 26 | 178.00 | 6.00 " 15 " |
| 11(10) | 4 3/4 | 70 | 20 | 110.00 | 4.00 " 9 " |
| 12(17) | 4 3/4 | 212 | 26 | 172.00 | 6.00 " 14 " |
| 13(10) | 5 3/4 | 60 | 20 | 110.00 | 4.00 " 8 " |
| 14(17) | 5 3/4 | 195 | 26 | 172.00 | 6.00 " 13 " |
| 15(10) | 6 3/4 | 50 | 20 | 110.00 | 4.00 " 7 " |
| 16(17) | 6 3/4 | 178 | 26 | 172.00 | 6.00 " 12 " |

Note: The number in parenthesis after the model number denotes the number of leaves with which the register is equipped.

# Dictating Machines

Dictating machines are one of the few items of business equipment designed for saving the time of the executive himself. All other machines, with but few exceptions, such as the telephone and signature writing devices, are designed principally to save the time of his subordinates.

Some of the outstanding advantages of machine dictation are:

1—The time of the dictator and the typist are used concurrently on their respective work. While the executive is dictating one letter, the typist is completing the previous one. The result is that the typing of important letters can be finished proportionately earlier in the day.

2—Matter may be dictated at any time, without regard to office routine —after hours, during lunch periods, and, as is more important, when the idea is most clear in the mind. Inspirations need not be lost; replies to letters may be made after the first reading when answers are most suggestible. There need be no waiting for a stenographer to be summoned.

3—Allows the typist's production to be uniform throughout the day. When matter is to be dictated, it is not necessary to interrupt and delay the typist in the work she is doing. She is able to plan her work ahead systematically, if she knows there will not be any interruptions to take dictation.

4—Increased capacity. The time that a stenographer usually spends in taking dictation, may be utilized for greater type production, thus eliminating, in many cases, the necessity for increasing the stenographic or typing force, hence keeping down the payroll, eliminating the cost of additional equipment and extra space rental.

5—Increased speed in typing, resulting from clearly spoken words with meanings and punctuations denoted by inflections of the voice. The transcriber is not delayed by the necessity of puzzling out cold notes.

6—Dictation can be carried on at conversational speed. There is no limit to the speed at which words can be recorded on the cylinder. It will take 200 or 300 words per minute. Technical terms, usually difficult to decipher from stenographic notes, are repeated to the typist just as spoken, and if desired, she may slow down her transcribing machine to one-half or one-quarter the dictated speed.

Resistance to the use of dictating equipment has been set up by typists who claim disadvantages for it such as that it is injurious to the hearing and the health.

There seems to be no basis for the claim. Certainly, transcribing is no more injurious to the hearing or nerves than the telephone is to the executive who uses it constantly all day, with less uniformity of sound volume and continuity.

A claim, perhaps within reason, is that it effects the stenographer's speed in taking notes. On the other hand, it would seem that the advantages accruing to the employer and consequently, likely to be reflected in advancement in position and salary for the typist, would favor the use of dictating equipment.

The companies manufacturing dictating equipment have developed systems and methods of organization for the handling of correspondence, and maintain staffs of trained engineers to co-operate with present and prospective users.

## Equipment and Operation

Dictating equipment comprises:

1—The dictating machine, into the mouthpiece of which the words of dictation are spoken and recorded, by cutting in continuous spiral lines on a wax cylinder.

2—The transcribing machine used by the typist to reproduce the words recorded on the cylinder by the dictating machine.

3—Wax cylinders on which dictation is recorded.

4—The shaving machine by which the cylinders are shaved or scraped to present a smooth surface for new dictation, by removing etchings of previous dictation.

The cylinder is placed on the dictating machine over a holder, called a mandrel, which has a spring arrangement to hold the cylinder tight, but allows for expansion and contraction with changes in temperature.

The recording device is a needle set in a diaphragm. It is similar in construction to that used on a phonograph. A lever serves to release the needle entirely from the cylinder, or to place it in a cutting position so as to record dictated words; another movement serves to place the needle in reproducing position so as to repeat a few or all of the words recorded.

A finely threaded screw is geared to rotate when the cylinder revolves, to propel the carriage containing the needle and the speaking tube (on the dictating machine), or the hearing tube, (on the transcribing machine), across the cylinder, making a spiral cut by the needle on the record, 150 or 160 lines to the inch, affording a very large dictation capacity on each cylinder.

Both the dictating and transcribing units are electrically driven from a motor contained in the base of the cabinet. The power is transmitted by means of a belt from the motor to a pulley wheel, which is mounted on the same shaft with the cylinder. Between the pulley and the mandrel is a clutch. The motor operates continuously while the machine is in use, the mandrel carrying the cylinder rotates only when the clutch is engaged.

The dictator's machine is installed at his desk, either on a stand or directly on the desk, and is always ready to record letters, notes, memoranda, instructions, etc. When the mouth piece (a flexible tube), is lifted off the hook on which it is held, a switch automatically operates to start the motor. The cylinder does not revolve until a clutch is engaged by pressure on an operating button or bar located on the mouth piece, convenient to the dictator's hand. Releasing the pressure on the control device disengages the clutch and stops the cylinder from rotating.

A cylinder may be removed at any time either before, or when, dictated to its capacity, and when placed on the transcribing machine, it will reproduce exactly as dictated, preserving all the inflections of the voice. The controls to stop and start the revolution of the cylinder on the transcribing machine, differ with each make; instead of the mouth piece, a rubber hearing tube is attached to the sound box.

Changes and corrections may be made in dictation as frequently as desired. The dictator may listen back to a few words or all of the dictated matter, and may make such notations either on a portion of the cylinder reserved for that purpose, or on a slip of paper or celluloid furnished by the different makers, graduated to agree with a scale on both the dictating and transcribing machine.

Both the dictating and transcribing units are equipped with a governor to regulate the speed of the motor, to synchronize the speed of revolutions of the cylinder on both the dictating and transcribing units, to suit the pitch or cadence of the voice of the individual user.

Matter is dictated in a natural tone of voice; it is not necessary to raise the pitch or to increase the volume.

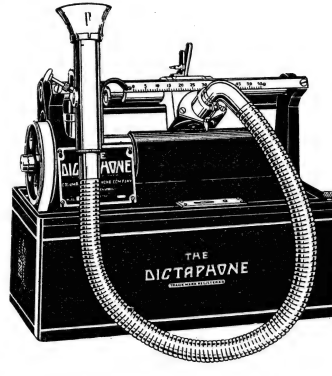
## DICTAPHONE

Made by the Dictaphone Corporation, 1819 Broadway, New York City. Sold by their own sales force through agencies located in principal cities throughout the country.

The complete equipment comprises, the dictating machine, the stenographer's transcribing machine, the recording cylinders and the shaving machine.

The recording and reproducing units differ somewhat in design. Both are motor driven and equipped with a primary speed adjustment consisting of a resistance coil within the cabinet, cooled by a small fan, and a secondary adjustment for the regulation of the speed by the operator to suit the speed of reproduction or the pitch of the dictator's voice.

Power is transmitted by means of a belt from the motor to a pulley wheel on the same shaft with the cylinder. A feed screw propels the carriage across the cylinder. The mandrel is collapsible to provide for contraction and expansion of the wax cylinder, due to atmospheric changes. All machines have pressed steel cabinets.




The Dictating Machine

### The Dictating Machine

The speaking tube is equipped with a plunger button convenient for operation by the thumb. When the tube is grasped by the hand, pressure actuates a clutch to start or stop the rotation of the mandrel on which the cylinder is mounted. Motion is conveyed from the starting and stopping button to the clutch, by a flexible wire cable, to a plunger located within the machine, causing the clutch to be thrown or released by air pressure. Pressure on the button starts the cylinder; releasing pressure, stops it. The motor runs continuously while the machine is in use, being started automatically by lifting the end of the speaking tube from a hook on which it rests. Placing the tube back on the hook, automatically stops the motor.

The recording device contains two sapphire points, mounted on the same diaphragm, one for recording, the other for transcribing or listening back. A lever adjusts either needle to position. A pointer on the under side of the carriage shows the exact position on a graduated scale, of the cutting being made on the cylinder. When it is desired to listen back to any dictated matter, the movement of the lever throwing the transcribing point into position, automatically back spaces the carriage far enough so that the dictator can hear the last few words of dictation. When the lever is again moved to position, the needle is set for dictating, with the carriage in position for continuing dictation.

The makers provide printed forms in pads, for the dictator's use in noting on a graduated scale, corresponding to the carriage scale on the dictating and transcribing machines, the exact position on the cylinder of errors, corrections, the length of letters and any other memoranda, thus providing to the typist with each cylinder a chart of the complete details

## DICTAPHONE—continued

and instructions for its transcribing. When it is desired to remove a cylinder, a hand lever ejects it far enough beyond the outer end to allow of its being removed without bringing the hands in contact with the surface.

### The Transcribing Machine

The recording device on the transcribing machine has but one needle point for reproducing. The carriage on which the reproducer is mounted, differs in design from the transcribing unit, but the mechanical principle by which it is propelled across the cylinder is the same.

The starting and stopping of the cylinder is governed by the typist by a pneumatic foot control, a button device technically known as the "foot-trip." Pressure on the button by the foot, engages a clutch to cause the cylinder to rotate; releasing the pressure on the button releases the clutch and stops the cylinder.

A speed control is provided to cause dictation to be reproduced faster, to raise the pitch, or slower, to lower the pitch of the dictator's voice, or to slow down the speed of reproduction. The back spacer is a key mounted on the carriage, which when depressed, causes any word or phrase that the operator does not catch the first time, to be repeated as often as is necessary.

Hearing tubes are equipped with a sound modifier, a valve in the hearing tube to control the sound volume of the dictator's voice.

### The Shaving Machine

Is electrically operated. Cylinders are mounted on a mandrel to rotate at high speed while a flat, sapphire disc knife is held against the cylinder at the proper distance (adjustable), to eliminate the cutting of dictation. As the cylinder revolves, the knife travels across from end to end, automatically. Shavings are carried by a suction fan into a receptacle in the lower part of the cabinet. Usually, a second or smoothing cut is made.

### Cylinders

Cylinders are made of wax, supplied in flannel-lined cartons to prevent scratching. Each cylinder may be shaved up to one hundred times and will hold approximately 1,200 words, spoken at the average conversational speed.

### Models and Prices

Type A. Model 7 Dictating Machine, electrically operated, complete with Universal current motor, flexible mandrel, speaking tube, stand and cylinder rack, 12 cylinders, six mail pockets.....$195.00

Type B, Model 7 Recording Machine, electrically operated, complete with Universal current motor, flexible mandrel, foot control, hearing tube, cylinder rack, stand ..... 180.00

Type S, Shaving Machine with Universal current motor..... 85.00

Cylinders with plain carton, each..... .60

with friction grip safety carton..... .75

Memorandum Pad (Form 948), 50 sheets to a pad, each..... .10

When stands are not desired with dictating machines, deduct $5.00.

## EDIPHONE

Made by Thomas A. Edison, Incorporated, Orange, New Jersey. Sold by a specially appointed sales force, through distributors located in principal cities.

The Ediphone system comprises the dictator's Ediphone, the stenographer's Ediphone, Ediphone recording cylinders and a shaving machine. The system is installed and supported by the Edison National Service.

Both the dictating and recording machines are of one standard design, only the dictating and transcribing arms, which are interchangeable, being different.

The motor is known as the Universal Ekonowatt motor. As its name implies, it operates on either direct or alternating current. It differs from earlier types of motors in that, while they required a resistance coil and a fan cooling device for same, the Ekonowatt motor requires no resistance, and uses less current for its operation.

The power is transmitted by means of a belt from the motor to the pulley wheel, which is on the same shaft with the cylinder. Helical cut steel gears turn a large feed screw, which propells the carriage across the cylinder. The thread cut on the cylinder is 150 to the inch (160 thread cut is optional).

The mandrel is collapsible to provide for contraction and expansion of the wax cylinder, due to atmospheric changes.




The Dictating Machine

A guard makes it impossible to put on or take off the cylinder while either the recorder or reproducer needle is lowered, to prevent the scratching of the cylinder and the breaking of needle points. The pulley is covered from view to avoid distraction while dictating.

The starting and stopping of cylinders on both the dictating and transcribing units is controlled by an electrical mechanism.

All machines have pressed steel cabinets.

### The Dictating Machine

The speaking tube is bell shape at the end, making it possible to talk across instead of into the mouthpiece, to obtain a perfect record. A control bar to start and stop the rotation of the mandrel on which the cylinder is mounted, is positioned so as to be directly beneath the hand when the speaking tube is grasped. Pressure on the bar starts the cylinder; releasing the pressure, stops it.

The motor runs continuously while the machine is in use, being started automatically by lifting the end of the speaking tube from the hook on which it rests. Placing the tube back on the hook automatically stops the motor.

The recording device contains two permanent sapphire points using the same diaphragm, one for recording, the other for transcribing or listening back. A lever adjusts either needle to position.

A means of correcting errors in dictation, and denoting the length of letters, the position of references, etc., on the cylinder, is provided by a celluloid-strip which fits into a holder directly in front of the cylinder. This strip is also imprinted with a form to show, in separate sections, the cylinder number, the dictator's name or number, number of extra carbons required and other data referring to corrections or special instructions. All pencil data on these strips may be erased to provide for their re-use.

## EDIPHONE—continued

A metal finger, extending from the carriage, travels along this strip as the cylinder rotates, indicating at all times, the position at which cuttings are being made on the cylinder. When it is desired to make any notation, a mark is made with a pencil on the strip, using the pointer the same way as a ruler would be used in drawing a line. When the cylinder is removed, this strip accompanies it and is inserted in a similar holder on the transcribing machine, serving as a guide to the operator.

### The Transcribing Machine

Stopping and starting are controlled electrically from an extra key which is attached to the typewriter beside the keyboard. A tap on this key causes the cylinder to revolve and the machine to talk. A second tap causes it to stop. A foot-trip control is optional equipment.

A speed control is provided to regulate the rotation of the cylinder, hence the pitch of the dictation. The back spacer is a key-driven electrical device, attached to the right side of the typewriter. A tap on this key causes the carriage to back-space automatically and repeat a few words, if the transcriber does not hear the dictation clearly the first time, or if she has listened to more than she can keep in mind.

Hearing tubes are of two styles: The Comfortable is a band which slips over the head and has oval celluloid discs covering the ears. The second type is a light-weight steel hearing tube, having no head band, equipped with tips which are adjusted into each ear.

### The Shaving Machine

Motor Driven. Cylinders are mounted on a mandrel to rotate at high speed while a flat, sapphire disc knife is held against the cylinders, at the proper distance (adjustable) to eliminate the cutting of dictation. As the cylinder revolves the knife travels across from end to end automatically. Shavings are carried by a suction fan into a receptacle in the lower part of the cabinet. Usually a second or smoothing cut is made.




The Shaving Machine

### Cylinders

The Ediphone cylinders are lined with cloth, providing re-enforcement to the wax. They are supplied with a flannel rimmed carton to prevent scratching. An interchangeable friction grip, mounted in the bottom of the carton, holds the cylinder from slipping out. Each cylinder may be shaved up to 100 times.

### Models and Prices

Dictating Machine, complete with correction index, 12 celluloid index slips, 6 mail pockets with metal hangers, 12 Saftae cloth-lined cylinders in cartons...$195.00

Reproducing unit, complete with correction index, with either type of hearing tubes ..... 195.00

Four-post pressed steel pedestal stand with leather casters and cylinder rack ..... 5.00

Shaving machine, steel cabinet, electrically operated..... 100.00

Shaving machine, hand operated ..... 50.00

Cylinders, each ..... .65

Discounts are allowed on cylinders when purchased in quantity lots.

# Duplicating Machines

## GENERAL DESCRIPTIONS

There are three general classes of duplicating machines:
(a) Those making impressions from type through an inked ribbon
(b) Those making impressions by means of stencils
(c) Those using gelatin or off-set process.

### Ribbon Printers

Machines printing from type through inked ribbons provide fac-simile typewritten impressions and show all the marks of impression, such as periods, commas, etc., through the sheet. The type is set flat or on a segment or drum; impressions being made through a wide ribbon, inked the same as a typewriter ribbon. The Multigraph and Multicolor Press are examples of this type of machine.

### Stencil Duplicators

Stencil duplicators produce impressions very similar to fac-simile typewriting and also permit of incorporating illustrations or drawings in the matter to be reproduced. The design of such machines usually embodies a drum around which the stencil is wrapped and secured. As the drum is revolved, it brings the surface of the stencil in contact, under pressure, with the paper, forcing the ink through and reproducing the characters or designs cut on the stencil.

The many machines designed for the use of stencils embody the same general principles of preparation, cutting and application of the stencil.

**Stencils and stencil accessories** are usually furnished exclusively by the makers of the various machines. Stencils of one make will provide impressions when used on another machine, but due to the differences in design of the means of attachment to the drum, unsatisfactory results are sometimes secured.

Stencils are sheets of tough, fibrous tissue, treated by secret patented processes and permit of creasing and crumpling without injury or affecting their ink-resisting qualities. (Wax-coated stencil sheets, while comparatively off the market, are still used for some machines.)

**The preparation of a stencil** starts with moistening it with water, (some makers provide a special liquid). While wet, it is inserted in a typewriter from which the ribbon has been thrown off (placed in the stencil position). The matter is typed with a firm, even stroke.

For the reproduction of handwritten matter or outline drawings, a stylus is used. Any kind of illustration or form can be drawn on a stencil for reproduction. Errors can be corrected; usually by a special corrective filling preparation supplied by the maker.

When the cutting is complete, the stencil is placed on the machine. Manufacturers claim as many as 50,000 impressions can be made from the same stencil. When a run is finished, stencils can be filed away for future use.

**Inking systems** vary on the different makes. On the earlier machines, the ink had to be applied with a brush every hundred, or less, impressions. The later types have either automatic ink distributors or automatic ink fountains and distributors. The ink in all cases is applied to the inner surface of the drum, which is perforated, allowing seepage through to the cloth fabric which forms a backing for the stencil.

## GENERAL DESCRIPTIONS—continued

**Addressing machine stencils** are similar to and are cut in the same way as above described, except that the reinforcing frames of some types necessitate special typewriter holding and feeding attachments.

### Gelatin or Composition Process Duplicators

The many makes and models of duplicators of this class, have a similarity of principle and operation. They utilize the natural humid property of gelatin or certain emulsive clay compositions, to transfer to the copying surface, the matter to be reproduced, from which offset fac-similies are made by impression.

They are mostly of the flat bed type. Some have the gelatin or other composition in a pan (as in the Heyer); later types use a strip of gelatin coated fabric, several feet in length, wound on spools to afford fresh copying surfaces as required.

Copies of hand or typewritten matter, ruled forms, mechanical or art drawings, are made from the original, which is prepared with a special duplicating typewriter ribbon, duplicating ink or indelible pencil, on any grade of paper. Four or five colors can be copied at one time.

After the surface of the gelatin has been washed with a wet sponge, or cloth, and all surplus moisture removed, the sheet of paper on which the original has been prepared, is placed face down on it and pressed out smooth with the hands or the rubber impression roller, provided with some machines. This process causes the form to be transferred to the gelatin surface, from which it is in turn transferred to the sheet of paper or other material brought in full contact with it.

From 25 to 100 clear copies are usually obtainable from the original, at a speed dependent upon the paper feeding equipment of each machine.

The copying surface of pan duplicators may be washed off for the next form, but with machines using a roll of film, the spools are unwound to present a fresh surface, the old form being completely absorbed by the action of the gelatine in from 20 to 24 hours, allowing the same surface to be used again after that time. The whole surface of the film can be used 20 to 30 times, from end to end, before requiring renewal. Refilling composition for pan type duplicators and gelatin coated rolls are supplied by each manufacturer, or can be had from dealers who handle such supplies.

### Litho Process Duplicators

A distinctive type of flat bed duplicator recently put on the market, operates somewhat on the principle of lithography. (See description of Opalograph.)

**Duplicator Feed Rolls and Platens**

of all kinds—for all makes of machines—

RECOVERED WITH JUST THE RIGHT KIND OF RUBBER—AND QUICK SERVICE TOO!

**AMES SUPPLY CO.** 564-72 W. Randolph St. Chicago

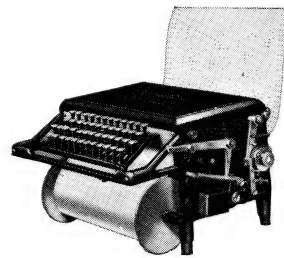
## HOOVEN AUTOMATIC TYPEWRITER

Made by the Hooven Automatic Typewriter Corporation, Hamilton, Ohio. Sold by specially appointed dealers and agents.



The Hooven is an automatic, electrically driven mechanism which operates a standard Underwood typewriter mounted upon it. The function of the device is to produce individual, actual typewritten letters of the same or similar nature at high speed, mechanically. The operation of the typewriter during the typing of the letter follows exactly the mechanical movements as when the machine is operated by a typist. These mechanical movements are actuated and controlled by a perforated strip of record paper (similar to a perforated roll used on a player piano), running through the automatic mechanism of the machine. The record paper is cut on an auxiliary machine called the "Perforator".

### The Perforator



In general appearance the Perforator resembles a typewriter. It has a standard four-row typewriter keyboard. The record paper, contained in a continuous strip (approximately 12 inches wide and 250 feet in length) is fed into (under) the Perforator so that as the keys are struck, small round holes are punched at different points across the width of the paper and down its length. The paper automatically feeds each time a perforation is made, so that but one hole is made on each line.

Before commencing to cut the record, the usual procedure is to prepare an exact typewritten specimen letter, as a guide, so that when cutting the record the extra perforations necessary to control line spacing, indentations, tabulations, etc., may be made. For convenience in interpreting the perforations as the record is being cut, all characters common in typewriting are printed in parallel horizontal lines across the width of the paper at the exact locations where the perforations for such characters would be made.

When the record for the entire letter has been finished, the recorded portion (usually several feet long) is torn from the roll and the two ends pasted together, forming an endless belt. It is then ready to be placed on the drum of the automatic typewriter actuating mechanism.

## HOOVEN AUTOMATIC TYPEWRITER—continued

### Operating Device

The typewriter actuating mechanism comprises a sub-base on which is mounted an Underwood typewriter. Both are mounted on a tubular stand, containing a receptacle for the record paper. The record paper, previously prepared on the Perforator, is placed on a drum in front of the actuating mechanism. This drum has a number of slots running lengthwise and when the record paper is placed on the drum, the holes rest over the slots. Pins, connected with the key levers of the typewriter, arranged in a horizontal row, rest on the paper across its width. When the machine is started, the drum revolves, carrying the record paper forward, by means of pin wheel gears meshed in guide holes in both sides of the record paper. As the perforations for each character come under its corresponding pin, the pin drops through the perforations into the slot of the drum, completing the mechanical connection between the automatic and the typewriter keyboard, resulting in operating one of the typewriter keys.

As rapidly as perforations appear, the keys are operated, the same as if by hand, writing each character in sequence and spacing, tabulating, etc. The normal typewriting speed is 130 words per minute.

### Principally Emphasized Features

The usual procedure in larger institutions is to have one attendant for a battery of three or four machines, inserting paper, making fill-ins and removing paper successively from each machine.

The principle of operation lends itself to the greatest flexibility in writing fill-ins. A word or words may be filled in at any point in a paragraph (for which the machine will automatically stop), or, if desired, the next letter written from the same record may have a five or six word fill-in, or even one or more entire lines may be filled in, and when the machine is again set into operation to complete the letter, it will automatically take care of the line spacing and paragraphing.

Fill-ins of addresses and other changes throughout the letter are typed manually by the attendant. A common practice is to address the envelopes immediately before or after the finishing of its accompanying letter. Because the entire letter is written at the one time, through the one ribbon, all typing is perfectly matched. Being a machine, accuracy of spelling, punctuating, etc., is assured, requiring no proofreading. Each letter is exactly the same as the first. The usual number of carbon copies can be made.

### Models and Prices

Perforator, for cutting the record paper.....$ 75.00
Automatic Device, including a standard Model No. 5 Underwood typewriter, with special control attachments, automatic operating device connected with typewriter, mounted on a stand, electrically operated ..... 650.00
One roll (250 feet) record paper furnished with each outfit.

## ELECTROGRAPH PRESS

Made by the Electrograph Company, 725 West Grand Boulevard, Detroit, Michigan. Distributed on a lease basis to specially appointed agencies and operated on a service basis at the above address.

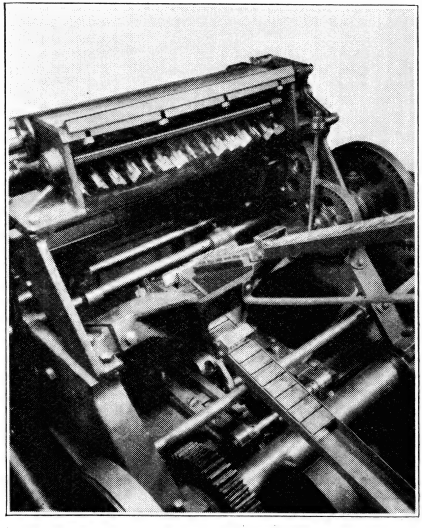
A Gordon job press, redesigned and equipped with special features to adapt it for producing fac-simile typewritten form letters with individual names or names and addresses imprinted. Printing is done through a movable ribbon. Addresses are set on addressograph plates made on a graphite embossing machine. As each impression is made the address

(Continued on page 255)

## INDIVIDUALIZING PRESS

Made by the Individualizing Company, 1132 South Wabash Avenue, Chicago, Illinois. Sold by their own sales force throughout the country.

A heavy, vertical press, resembling in size and appearance a Colt's Armory Press, specially adapted for imprinting individual names, or names and addresses, as the heading or part of the type form of circulars, booklets, broadsides, catalog covers, etc. It is designed to afford a means of providing the personal effect of individual names on direct mail advertising and to eliminate the expense of locking and unlocking forms for imprinting dealers' names on folders, etc.



Rear View Showing Method of Feeding and Discharging Address Slugs

Impressions are made with printers ink or through an inked ribbon; the entire form including the name and address, is imprinted in one operation. It prints a different name at each impression.

Linotype slugs making up the name and address, or other imprint, are set in the usual way on linotype machines by any typesetting house, and then bound accurately and tightly together as in a chase, by a specially designed interlocking steel band, easily and quickly put on by a separate automatic clamping device furnished with the press. Any style of display type may be used and any number of slugs may be included up to a maximum over-all size of 2 by 5 inches. All slugs for the same run are spaced out to be of uniform size.

Slugs are placed in a chute or galley and move by gravity into proper position for feeding into the gripper arm. A feeding arm then forces the slug through an opening in the bed of the press, into proper position in the chase. The make-ready is provided for by the method of clamping the slugs together. After the printing operation takes place, the gripper arm comes back into position to discharge the used slug into the lower galley or chute and to receive a new slug from the upper galley. Slugs may be filed away and used again indefinitely.

A movable ribbon is mounted on the press when individualized sales letters are to be produced. Addresses are set on slugs made up with facsimile typewriter faces. The address form is brought into position the same as above described, and the whole letter, body, address and salutation is produced at one operation through the same ribbon, assuring perfect match. The addressing of envelopes to match letters, can be done from the same slugs.

## INDIVIDUALIZING PRESS—continued

A speed of 1200 individualized pieces per hour can be maintained. The maximum type form size is 14x20 inches. An equipment of four ink rollers and vibrator, permits high grade printing in one or more colors with job printers ink. Embossed printing may also be accomplished and when the individualizing feature is not in use, any kind of job printing can be turned out.

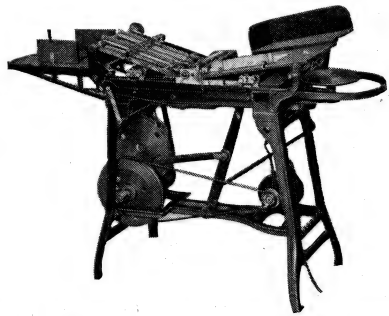
### Models and Prices

Made in one model only, as above described, to accommodate 14x20" forms; weight 4000 pounds; complete with slug clamping device for changeable address forms.....$3500.00

The manufacturers maintain a service department for the production of individualized letters, broadsides, folders, etc., for those concerns whose needs do not justify the purchase of a press.

## MULTICOLOR PRESS

Made by the Lisenby Manufacturing Company, 225 North Michigan Boulevard, Chicago, Illinois. Sold through specially appointed dealers and agents.



A complete office size, high speed, printing press, built on the flat-bed principle. It has been on the market for approximately ten years. Uses standard printers type, linotype, monotype, flat cuts, halftones, or numbering machine heads, the same as are used by any printer, and such as may be obtained at any printers' supply house. It will handle any type form up to 8 by 12 inches; sheet size 9½ by 14 inches. It is electrically driven at speeds from 1500 to 5000 per hour; affords hairline register.

Two classes of work; printing with printers' ink, and fac-simile typewriting, may be produced, both at the same time if desired. Being equipped with two ink fountains, impressions in two colors, in printers' ink, in one run are afforded, or, a letter-head may be printed in ink of one color, the body of the letter through a ribbon in another, and the signature or other desired printing in a third color, all at one operation. On form letter fac-simile typewritten work, either a movable inked ribbon or stationary ribbon may be used. The stationary ribbon comprises a ribbon fabric inked at each impression with typewriter ribbon ink, insuring uniform color throughout the run.

It may be fed by hand or automatically. Several automatic feeding devices have been developed by different companies for use in connection with this press. One of the most recent is the Davidson, holding 6,000 sheets of paper, and automatically feeding all classes of paper stock from light weight to 3-ply cardboard, envelopes, cards, etc., and bound booklets up to 16 pages. Adjustment is controlled by a balance lever. Friction feed; five small rollers grip the paper and pass it between another set of two small and one larger roller. It may be refilled while the press is running.

## MULTICOLOR PRESS—continued

### Models, Specifications and Prices

Victory Model, (placed on market in February, 1923), electrically driven by ¼ H. P. motor; chase size 8x12 inches, sheet size 9½x14 inches. Prints in one, two or three colors at one operation. Speed 1500 to 5000 per hour; weight 450 pounds; floor space, approximately 6 square feet. Price.....$700.00

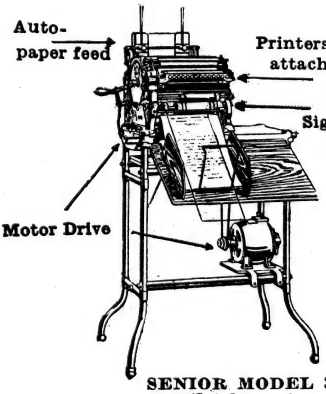
Automatic (Davidson) feed, a horizontal type of automatic feed, adjustable for feeding any weight of stock; holds 6000 sheets of 20-lb. bond, or its equivalent, at one loading. Price..... 450.00

## THE MULTIGRAPH AND AUXILIARY EQUIPMENT

Sold direct through salesmen and branches by The American Multigraph Sales Company, Cleveland, Ohio. (See also Folding Machines, Addressing Machines, Printing Machines.)

The Multigraph (also known as THE GAMMETER MULTIGRAPH) is an equipment for producing form typewriting and printing. By its method of type setting and means of making impressions, it is distinctive from any other machine on the market.

The basic principle is that of a drum having parallel slots cut horizontally, into which are set specially designed type to make up the form. This drum is set in a frame, equipped with controls and adjustments to provide contact with the paper, making impressions through an inked ribbon or with printers' ink, as the drum is rotated.




**SENIOR MODEL 36**
**completely equipped.**

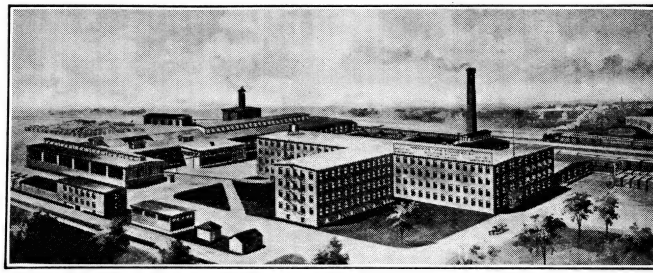
The first machines placed on the market in 1902, have been improved and new devices added from time to time. The various models of printing units have a similarity of appearance and follow the same basic principle of the original designs.

The equipment, exclusive of attachments, consists of three distinct classes of machines:

(1) Printers and Type Composing and Distributing Units Combined.
(2) Printers only.
(3) Type Composing and Distributing Units only.

Used for form typewriting, the Multigraph produces facsimile letters direct from type, printing through an inked ribbon. As a printing equipment, it uses printers' ink and produces any kind of printing and in any combination of colors that may be turned out on a regular printing press having its form and paper capacity. Any kind of display printing may be secured by the variety of type faces and job type that are available. Electrotypes and stereotypes may likewise be used. All models are semi-portable, being designed for use on stands.

# PRINTING PRESSES
# PAPER CUTTERS
# OFFICE APPLIANCES



*An Illustration of the Factory Manufacturing*

## GOLDING PRODUCTS

In this factory, one of the largest in the world, devoted exclusively to the manufacture of machinery and appliances for the printing and office appliance trades, the following products are made:

**PRINTING MACHINERY**

**Golding Art Jobbers** — **Golding Jobbers**
**Pearl Presses** — **Official Hand Presses**

**POWER PAPER CUTTERS**

**Golding Auto-Clamp Cutters** — **Golding Hand-Clamp Cutters**
**Golding Hand-Wheel Cutters**

**LEVER PAPER CUTTERS**

**Golding Hand-Lever Cutters** — **Pearl Hand-Lever Cutters**

**OTHER PRODUCTS**

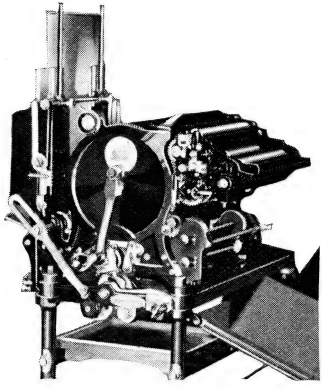
**Boston Card Cutters** — **Official Card Cutters**
**Little Giant Lead and Rule Cutters** — **Golding Tablet Presses**

***Write for Complete Catalog—Spanish and English Editions***

## Golding Manufacturing Co.

FRANKLIN, MASS., U. S. A.

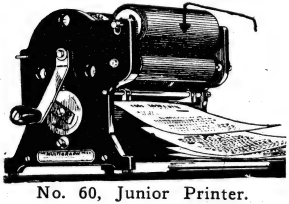
## MULTIGRAPHS AND EQUIPMENT—continued



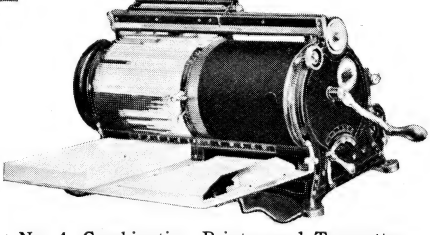
No. 36, Senior Printer.



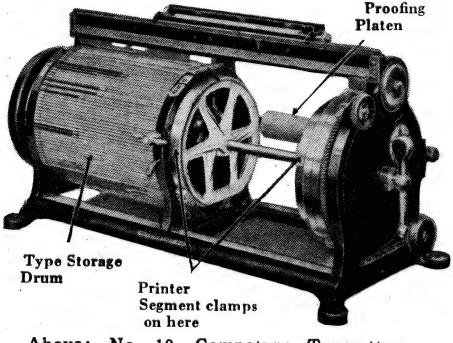
No. 59, Flexo Typesetter.



No. 60, Junior Printer.



No. 4, Combination Printer and Typesetter.






Above: No. 10, Compotype Typesetter
Right: No. 60 Printer and 59 Typesetter

## MULTIGRAPHS AND EQUIPMENT—continued

### Printing Equipment

**No. 60 Junior Printer** is the smallest of the later type Multigraphs, capable of producing either facsimile typewriting or impressions with printers' ink. It will produce a typewritten form 7¼x13½ inches, or 78 lines, or a printed form 8x13½ inches. It is hand fed and hand operated and is necessarily limited in its production as compared with the larger size printing units. It has removable drums, making it possible to compose on one drum while another is in use. Price.....$100.00

**No. 36 Senior Printer** is the largest and most versatile of the Multigraph Printers. Without attachments it can be used for producing facsimile typewriting or printing through a ribbon only. It is equipped with a platen release which prevents offsetting when paper is not fed. It may be equipped with motor drive, automatic feed, card and envelope feed, printing ink and signature attachments. When printing through a ribbon, the maximum size of the form is 7¼x11¾ inches and the maximum size sheet which can be fed is 9x16 inches. With the inking attachments, the maximum size of the form is 8x11¾ inches and the maximum size sheet which can be fed is 9x16 inches. Somewhat larger forms can be printed if special platens and segments or drums are used. Price.$300.00

**No. 46 Senior Printer** is the same in all respects to Model No. 36 but will take a sheet 11 inches wide. The form size is the same as on the No. 36. Price.....$400.00

**No. 4 Combination Printer and Typesetter** is one of the earlier types of Multigraph. It is a complete composing and printing unit. The type is stored on one drum and composed to the form on the other. When either is in use, the other is tied up. Thus the efficiency of the machine is impaired as compared with the later models. It is somewhat similar in appearance to the Compotype Model No. 10 and makes use of the same method of composing, but differs from the Compotype in that it is also a printer. It may be used for facsimile typewriting work printing through a ribbon, or will print from hand set type or electrotypes with printers ink. It is equipped with either solid or segmental drums. The solid drum has a printing surface of 7½x17 inches or 98 lines of typewriting. The segment drum prints a form measuring 7½x11¾ inches or 68 lines of typewriting. It may be equipped with any of the attachments. Price with solid drums, or with two segmental drums....$250.00

### Composing (Typesetting) Equipment

**No. 59 Flexo Typesetter** is light and compact and easily transported from place to place. It consists of a frame containing three slotted trays in which type is stored and from which selection is made on to a specially designed fork. From this fork the type is transferred to the drum or segment, which is removable from the printing unit for the purpose. Distribution is made by the reverse of this process. This is the most generally used typesetting equipment. Price, including type.....$ 50.00

**No. 10 Compotype Typesetter** is a machine composed of a frame into which are set two cylindrical drums. The drum on the left contains the type stored in slots. The segment of the printer is clamped to the cylinder on the right and by means of a semi-automatic device, the type is transferred from one drum to another in the proper sequence to make up the form. After the type has

## MULTIGRAPHS AND EQUIPMENT—continued

been set up, the segment can be removed from the Compotype and placed on the printing unit. In distribution, the segment is replaced on the frame of the Compotype and the type is distributed in a manner similar to, but the reverse of, that by which it was composed. This typesetter is preferable when quick changes in composition are desired, such as price lists, menus, etc. Employing a composing fork, it can also be used to compose on non-removable drums. Price.....$100.00

### Attachments

Printing ink attachments are made in two models. One consists of two and the other of seven rolls. These attachments obviate the necessity of using aniline ink or ribbon and permits the use of printers ink of any color.

**Two Roll Inking Attachment No. 61** is a simple two-roll attachment for printing in limited quantities. The ink supply is limited and is replenished by hand to a steel roll from which it is fed to a smaller roll and then to the form. Price.....$ 35.00

**Printing Ink Attachment No. 18** has an automatic fountain feed and is designed for long runs. It has seven rolls with adjustable feed to afford uniform inking. It may be attached to Nos. 3, 4 or 36 Printers. Price .....$130.00


# Rochester Re-Inking Works

*Established in 1900*

**Rochester, N. Y.**

Used Multigraph and similar Duplicating Machine Ribbons Re-Inked.

Do not throw away your used duplicating machine ribbons. Mail them to us and save 50% or more. We re-ink and guarantee them to be as good as new, we pay transportation one way. Mail us your order.

DEALERS write us for special proposition to represent us in your territory.

***New ribbons for sale for all makes of machines***

## MULTIGRAPHS AND EQUIPMENT—continued

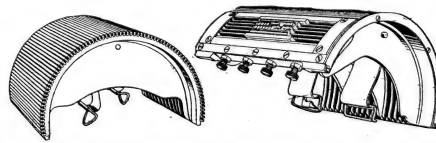
**Automatic Paper Feed No. 15** has an accurate adjustment for feeding any weight of paper and of any size between 2¾x6 and 9x15 inches at high speed up to 4800 sheets per hour. It is designed so that the machine may be left unattended when running and when the paper is exhausted, the power is automatically shut off. It may be used on Nos. 3, 4, 36 or 46 Printers. Price.....$ 85.00

**Automatic Card and Envelope Feed No. 51** is a separate attachment designed for its particular purpose. It is similar in other respects to the regular automatic paper feed. Price.....$ 85.00

**Electric Power Drive No. 14** is contained in a sub-base on a tubular stand and is belt driven from AC or DC motor. It affords a selection of speeds of 2400, 3600 or 4800 impressions per hour and can be attached to Nos. 3, 4, 36 or 46. Price, AC or DC Motor..$130.00
Universal motor ..... 145.00

**Signature Device No. 24** makes possible the printing and signing of a letter in one operation. The signature can be placed over the type matter if desired and printed in any color with an ink resembling writing fluid. A curved electrotype is made of the signature. This is mounted on a small drum and is inked by a simple two roll mechanism. It may be attached to Nos. 3, 4, 36 or 46. Price....$ 75.00

**Tubular Stands** ..... 20.00



**Drums, also called segments,** are removable from all the later types of machines. They are the device into which the type is set and are used for the same purpose as a printer's chase. They are usually furnished with horizontal slots (called rails), but for special work, they may be had with the slots cut vertically. They are also supplied in special lengths or with a portion cut away to form a regular printer's chase with locking screws to hold regular slugs or individual printer's type for imprinting, etc.

| | | |
|---|---|---|
| No. 6-A | Regular segment | $ 20.00 |
| No. 27 | Vertical rail segment | 55.00 |
| No. 32 | Horizontal bank for job type | 12.00 |
| No. 44 | Extra long, 13½ inch | 25.00 |
| No. 45 | Ruling line equipment | 17.00 |
| No. 52 | Check imprinting segment | 90.00 |
| No. 53 | Typewriter space segment | 115.00 |
| No. 54 | Horizontal segment with seven vertical rails | 90.00 |
| No. 47 | Segment holder | 7.00 |

(Continued from page 247)

## ELECTROGRAPH PRESS—continued

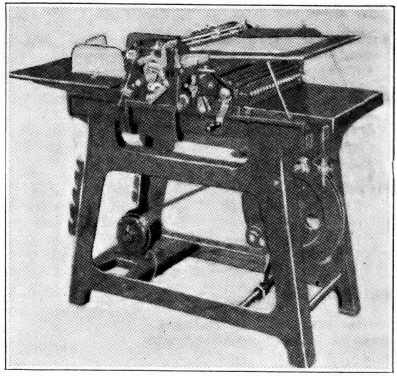
plate is removed and a new plate for the next name automatically brought into position so that the whole letter, body, address and salutation, is produced at one operation through the same ribbon assuring perfect match. Addressing of envelopes to match letters can be done from the same address plates.

A speed of 1200 impressions per hour can be maintained.

## MULTIGRAPH PRESS

The Multigraph Press is a recent addition to the line of the American Multigraph Sales Company. Main office and factory: Cleveland, Ohio.

It is designed to meet private printing plant requirements for production of house organs, folders, etc., printing from printers' type, electrotypes or plates locked in a form or chase.



It is of the reciprocating bed and cylinder principle (that is, the type matter or form is locked in a chase on a bed and prints against a cylinder around which the paper is carried). It differs from the rotary principle of the regular Multigraph (that is, where the type matter or form, is fastened on a cylinder and prints against a smaller cylinder or platen, the paper being carried between the two cylinders).

### Specifications

The printing surface is approximately 10x16 inches and maximum paper size, 11x17 inches; with one-half horsepower motor, a speed of 3,000 per hour can be obtained.

The design is somewhat similar to that of the large cylinder press used in printing establishments, except that it has been adapted to layman printing needs. The bed, carrying the type form, travels on rollers or tracks and momentum is overcome with air cushions. Complete ink distribution is secured by means of two form rolls, three distributing rolls, a ductor and a fountain roll, operating in conjunction with an ink distributing plate and a wide fountain with 18 adjusting screws for regulating the flow of ink. This principle of inking is similar to that employed in the printing ink attachment of the rotary mimeograph.

The paper feeds to positive stops and positive grippers carry it around the cylinder. The movement of the paper governs the throw-off of the press preventing an imprint or register on the counter when paper is not fed. Strongly built with certain moving parts of aluminum to obtain speed without vibration.

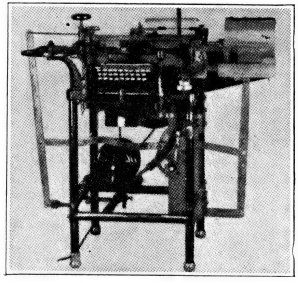
### Models and Prices

Made in one model only; quantity production has not as yet been reached and the machine will probably not be actively marketed for another several months. Prices, therefore, cannot be definitely quoted.

*This book will save you money if you use it. Write and tell us what it saved you.*

## MULTIGRAPH KEYBOARD COMPOSING MACHINE

The Keyboard Compotype is a new development of the American Multigraph Sales Company, Cleveland, Ohio, not yet being manufactured in quantities. It composes facsimile typewritten forms for printing form letters and other typewritten matter on the Multigraph, by the operation of an in-built standard double shift typewriter keyboard. The speed in composing approximates the speed acquired on a typewriter by an average operator. It embosses the characters on strip aluminum, automatically fed in a continuous strip from a storage reel at the left. As each character is designated on the keyboard it is embossed on the strip, which at the same time is formed on top and bottom edges making a semi-clinched channel section to fit the holding member of the type form. This form, called the "blanket," is a sheet of flexible metal, and answers the same purpose as the usual form segments on regular Multigraph printing and composing units, and sells at $1.00 each. Its advantage lies in that it takes up very little filing space, weighs less than half a pound and can be re-composed any number of times. It also affords ease of making partial changes or corrections.



As each line is composed it is cut off and automatically moved to a line position on the blanket, after which the blanket is revolved automatically to the next line position. The form when completed and clamped on a printing unit, is ready to print.

Address plates can also be embossed on this unit. The characters are embossed and automatically assembled one line at a time on a holder designed on the same principle as the metal blanket above described, but of a smaller size, intended to be used in connection with an addressing machine now in process of development.

The production at the present time is limited to equipping the sales offices of the American Multigraph Company in the larger cities for service in composing forms for Multigraph users. Quantity production of machines available for users will not be established for a considerable time.

## STRAWN PRESS

### (Formerly Called "The Omnigraph")

Made by the Strawn Press Company. Factory: Zenia, Ohio. Sold through their own representatives.

The Strawn Press is not, in a strict sense, an office duplicating machine, being designed for general printing purposes, and particularly adaptable for high speed circular letter and letterhead work. It is a web fed color-printing press, addressing machine and a duplicating machine in one unit.

By progressive operations in one run through the press, the paper is fed from rolls, the letterhead is printed in one or several colors, facsimile typewritten impressions are made on one or both sides of the sheet, a different name and address filled in at the top of each letter, and a facsimile pen and ink signature imprinted, or any one of these operations may be performed individually. A speed of 25,000 impressions per hour, with perfect registration is maintained on any kind of work.

Now being built on order only, in 9½x11 form size only.

## DEVELOPMENT OF STENCIL DUPLICATING ART

This subject logically separates into three parts, i. e., chemical processes, perforating processes and extracting processes. These appeared in the order stated. Only the last two involved "mechanical stencilizing", which is characteristic of the **Dermatype process; nevertheless**, it is important that the chemical processes be at least identified as part of the history of the art.

A good illustration of the chemical process is found in the Zuccato "Papyrograph," patented in Great Britain in 1874. A sheet of close "bank post" paper was saturated with a varnish and dried, for the stencil sheet, and afterwards written upon with a strong solution of caustic soda, which eroded the coating and the paper base. When this was washed away the written lines formed a stencil through which ink was forced by an ordinary copying press to an impression sheet lying underneath.

Then followed what was recognized as the Perforating Processes. These logically divide into autographic processes and typewriter processes, and were developed in that order. The Edison electric pen was the first, and employed a sheet of closely woven and sized paper which was written upon by a rapidly rising and falling needle point, piercing the paper along the lines of the characters written and permitting ink to be subsequently forced therethrough.

The next development was the Cyclostyle wheel pen process, employing a sheet of closely woven and sized paper laid on a smooth zinc plate and written upon by a stylus having at its point a toothed wheel mounted to freely revolve, the teeth of which formed minute perforations in the sheet, permitting the subsequent passing of ink therethrough for the production of copies.

Following the Cyclostyle came the Edison patent, which employed a so-called "file plate", which was provided with a large number of fine perforating points or projections. Upon this a thin closely woven sheet of waxed paper was laid and written upon with a blunt stylus, causing perforations to be made in the paper from underneath rather than, as in the case of the electric pen and the wheel pen, from above.

Stencil duplication of typewritten matter commenced also with the Perforating Process wherein the faces of the type on a typewriter were driven against a stencil sheet, which was laid over a box or a holder of needles, thus pricking holes in the stencil sheet to correspond with the face of the type.

In contradistinction to the Perforating Process, the Extracting Process was born in the year 1887, by John Brodrick. Instead of using closely woven paper for stencil sheets, Brodrick discovered open-woven, porous, lace-like paper which he coated with soft wax. Instead of cutting or piercing both the paper and the coating, as had his predecessors, he chose a paper already characterized by being substantially all holes, and these holes he plugged up with soft wax. The impact of the type simply drove out the wax plugs from between the lace-like fibers, leaving those fibers, however, intact so as to support the centers of "loop" letters.

So far, then, as concerns mechanical stencil duplicating processes, both autographic and typewriter, no processes were known prior to 1887 which did not involve cutting, piercing or gashing both the basic stencil paper and its coating.

The wax typewriter stencil sheet met with great favor and was employed throughout the world to a very large extent for many years, and is still used, but it has defects, the most striking of which is its extreme delicacy and fragility. Careless handling in placing a sheet in the typewriter or removing it therefrom is liable to crack the wax coating and expose the paper fibers. Again, a limited number of copies only are obtainable from the wax stencil sheet. Efforts were made to overcome the shortcomings of the Brodrick wax sheet during a period of a number of years, but unsuccessfully until the invention of the Dermatype stencil, which comprises

## DEVELOPMENT OF STENCIL DUPLICATING ART—continued

a coating of coagulated protein and the same thin, lace-like base paper as is used for the wax stencil sheet. This was placed on the market in the early part of the year 1912, and its success during the succeeding years has been little short of phenominal. It overcame all the defects of the pre-existing material. In sharp contrast with the delicacy and fragility of the wax-coated Brodrick stencil paper the Dermatype is practically indestructible, both before conversion into a stencil and thereafter, when printing. The use of the wax stencil paper has, therefore, been practically superceded by the Dermatype sheet, due to the many advantages of the latter.

The Edison stencil patents, the wax stencil sheet patents and the Dermatype patents have been and are owned by A. B. Dick Company, who have marketed them throughout the world.

The progress of the art of stencil duplication has been measured by the development of the stencil paper. Duplicating machines are but the vehicle for the functioning of the paper. Necessarily, the machines, too, have been developed.

The Mimeograph printing machines for carrying the stencil paper and ink during the process of making copies, have undergone a complete evolution since their origin in 1887. The original device was very simple in construction, and was known as a flat-bed machine on which the ink was applied to a stencil held in a flat hinged frame. The impression paper was placed underneath to receive the imprint.

Nowadays the stencil is placed on a rotating cylinder through which ink is automatically fed and the impression paper is also fed and delivered automatically after printing. In the first instance, 500 copies an hour was considered a good printing speed, while at the present time 5,000 copies per hour are easily obtainable.

## EDISON-DICK

Made by A. B. Dick Company, 730-744 West Jackson Boulevard, Chicago, Illinois. Sold through branch offices and specially appointed dealers and agents throughout the world.

A rotary type of stencil duplicator which with two other features—the Dermatype stencil and the Mimeoscope—make up a distinctive, simple, quick and economical process of office duplication of typewritten forms, line and shaded illustrations, drawings, etc.

### The Stencil



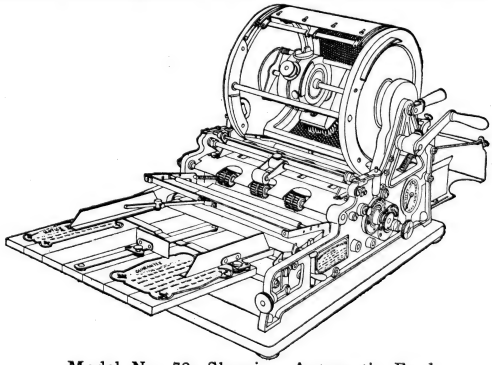
Cutting the Stencil

The dermatype stencil, an exclusive product of the company, is a thin, firm-fibered sheet of dark blue paper on which the master copy is cut by a typewriter or stylus. Its special advantage lies in its being practically indestructible, permitting many thousand copies to be printed from a single stencil at one or different times, and the clear-cut impressions it gives. It is an improvement upon and supersedes, practically entirely, the original wax paper stencil. It is not affected by changes of climate and can be freely handled. Various sizes of this stencil paper are provided, all equipped for quick and easy attachment to the drum of the printing unit. A special ink has also been developed by the makers for use in duplicating with the dermatype sheet.

## EDISON-DICK—continued

### The Machine

Made in various styles and sizes, equipped with hand or automatic feed; hand or motor operated. Its construction follows the usual principle of a perforated rotating drum around which the stencil is secured. All models, except those noted below, are equipped with a fountain chamber in which ink is poured, locked in, and automatically released as wanted. The fountain cannot leak or drip. Speed up to 5,000 impressions per hour is afforded. An electric drive is a special unit contained in a stand.



Model No. 78, Showing Automatic Feed

### Models, Specifications and Prices

**Model No. 78,** prints on cards or sheets, forms of any size up to 9 x 16 inches; maximum printing surface 7¼ x 14 inches. An adjustment allows the shifting of the printing on the sheet for accurate registration. Equipped with automatic feed; platen release (keeping the impression roller away from the stencil when no paper is passing through the machine, thus preventing the soiling of sheets that follow); adjustable strippers, (to handle narrow widths of paper the same as larger sheets). An interchangeable hand feeding board is provided for postcards, tags, small labels, etc. Printing recorder (a celluloid dial) with two pointers, one for units and one for hundreds which may be set to any desired number up to 10,000 showing at all times the quantity to be printed and ringing a bell when the required number have been run. Capacity 5,000 impressions per hour ..... $150.00

**Model No. 77,** the same as Model No. 78 except that it has not the automatic feeding device ..... $110.00

**Model No. 79,** for extra large forms, accommodates paper 14 x 18 inches; maximum printing surface 11 x 16 inches; hand fed and hand driven. Designed for large size forms. (This model differs from Model No. 78 in that it has no automatic feed, no feeding pins, no printing recorder, and cannot be motor driven. The receiving tray and stripping system is also different) ..... $130.00

**Model No. 80,** same as Model No. 79, except that it accommodates paper 17 x 22 inches and the maximum printing surface is 14 x 20 inches... $150.00

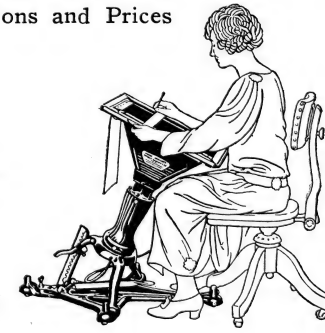
Electric equipment and stand for models No. 77 and 78; with 110-120 volt universal-current motor, extra ..... $100.00
Same as above with 220-240 volt A. C. or D. C. motor, extra..... 105.00
Tubular stand with a drawer partitioned for supplies..... 22.50

## EDISON-DICK—continued

### The Mimeoscope

A drawing table with an electrically illuminated glass top. By its use tracings are made from drawings of any nature (mechanical or free hand) on dermatype stencil paper. Constructed of metal and wood with a revolving base, adjustable to any position of the work. The top or drawing plate is frosted glass, bound by maple guide rails, squared to accuracy. An electric light placed under the glass radiates under and penetrates the drawing being traced, and the stencil which is fastened on the board over the original.

### Models, Specifications and Prices



Size No. 1, for making stencils for Nos. 77 and 78, and smaller Mimeographs; for forms up to 7¼x14 inches, complete with a full set of writing and drawing styli, T-square and compasses; 15-foot extension cord with plug; uses a 60-watt lamp ..... $50.00

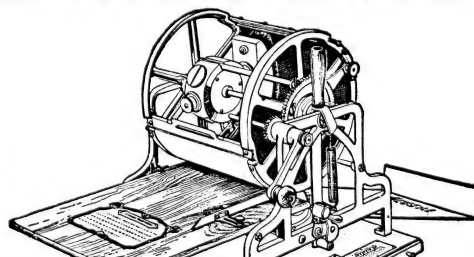
Size No. 2, for forms up to 14x20 inches; complete with drawing equipment, etc., same as Size No. 1..... 70.00

Tiltoscope, for tilting the Mimeoscope to any position desired. 20.00

(Continued on page 264)

## NEOSTYLE

Made by A. B. Dick Company. General offices, 730-744 West Jackson Boulevard, Chicago, Illinois. Sold by the Neostyle Sales Agency, (Neostyle Sales Department, A. B. Dick Company), 170 Fifth Avenue, New York City. Branches 53 Franklin Street, Boston, Mass., 325 W. Madison Street, Chicago, Illinois, and also sold through specially appointed dealers and agents throughout the country.



A rotary stencil type duplicator, equipped with automatic fountain inking device, impression counter and paper guides; hand fed and hand operated. Will accommodate paper up to 9½ by 18 inches; printing capacity 7¼ by 13½ inches. Speed approximately 3,000 per hour depending upon the skill in feeding.

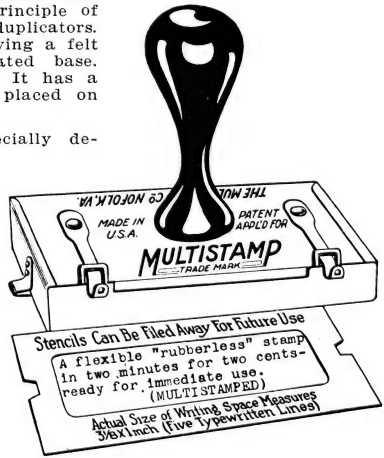
Made in one model, No. 8-F..... $65.00

## (Stencil) Duplicating Machines — Catalog Section

### MULTISTAMP

Made by the Multistamp Company, Norfolk, Virginia. Sold direct through their own salesmen and through dealers and agents.

The Multistamp is really a small stencil duplicator making impressions by direct pressure (as in the use of a rubber hand stamp), instead of the rotary principle of mechanically operated stencil duplicators. It consists of a metal frame having a felt ink pad attached to a perforated base. through which the ink is fed. It has a handle similar to that usually placed on rubber stamps.




Indestructible stencils are specially designed for use with the device. The matter to be reproduced is cut with a typewriter or stylus after which the stencil is applied and held by clips to the surface of the ink pad. Impressions are made in the same manner as with a hand stamp.

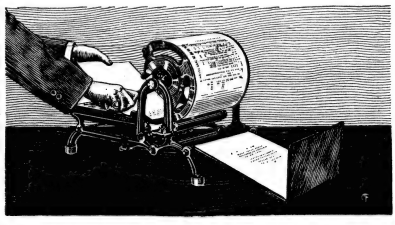
The Multistamp provides a quick means of making brief announcements, corrections, endorsements, envelope and tag addresses, or for any purpose for which rubber stamps are ordinarily used. Illustrations, fac-simile signatures and reproductions of handwriting are possible. It will also produce impressions in bound books. Stencils, after being used, may be filed away and used again indefinitely, as required.

Model No. 1 Including 25 stencils.....$ 7.50
Model No. 3 Postcard size segment design (operated with a rocking motion), including 24 stencils..... 15.00

### POLYPRINT

Made by the Polyprint Duplicator Company, Incorporated, 264 Canal Street, New York City. Sold direct by mail.

A stencil duplicator having a semi-circular drum mounted on a cast iron frame. In operating, instead of making a complete revolution, the drum ocsillates with what is known as a "rocking chair" movement. There are no gears in its mechanism. It has a speed of from 1500 to 2500 impressions per hour. Some of its special features are: A semi-automatic paper feed; a gravity ink distributor (the supply of ink is not automatic) which is in constant movement



## POLYPRINT—continued

during the operation of the machine, the action being similar to that of the ink distributor on a printing press. An automatic compression roller provides for self-conforming pressure on the paper as it is fed through and is in contact with the drum only on the actual printing movement. This pressure roll has a tension adjustment to regulate the shade of the impression—either lighter or darker. Paper gauges are provided. A special postcard hopper or gauge, or a series of hoppers to feed small forms or tickets, may be attached.

### Models and Prices

(Including Complete Initial Supplies)

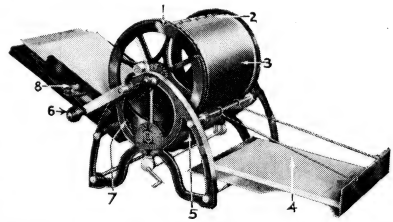
One size only is made, having a maximum printing surface of

7½ x 12 inches.....$48.00

## ROTOSPEED

Made by The Rotospeed Company, 505 East Third Street, Dayton, Ohio. Sold direct by mail and through specially appointed dealers.

A simple, compact stencil duplicator of the revolving drum type.




Maximum paper size 8½ by 16 inches. Equipment includes, an adjustment (1) to allow changing the impression to any position after stencil has been attached to drum; semi-automatic feeding device (7) insuring accurate registration at normal speed of 75 impressions per minute; automatic impression roll (5) requiring no adjustment when different weights of paper are used; impression counter; adjustable feed guides.

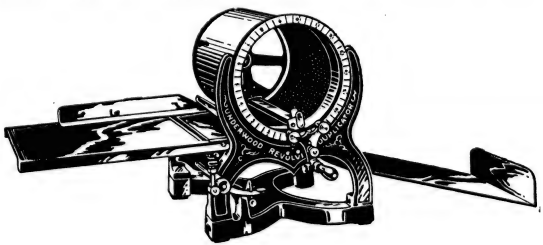
### Models and Prices

There is only one model, complete including all initial supplies.....$48.50

## UNDERWOOD REVOLVING DUPLICATOR

Made by the Underwood Typewriter Company, Incorporated. Main office, Underwood Building, 30 Vesey Street, New York City. Sold by their own salesmen through branches located in principal cities.

A revolving drum type of stencil duplicator, using a waxed stencil. The stencil is cut on the typewriter in the usual way and clamped on the drum. The ink is applied direct to the ink pad, wrapped around the drum, and may be replenished by a hand brush from the inside, through the perforations of the cylinder.



## UNDERWOOD REVOLING DUPLICATOR—continued

The handle is adjustable to locate the proper beginning point of the duplicated form on the paper. It is equipped with automatic starting and stopping point to secure accurate and perfect registration. The tension on the pressure roller is adjustable to secure heavier or lighter inking. A pressure bar exerts even pressure on all parts of the stencil while the copy is being printed. A stripping plate prevents imprinted copies from adhering to the cylinder. Equipped with an impression counter.

The cylinder is removable and permits of substituting another cylinder when two color impressions are desired. It is hand fed.

**Form size** is 7½ x 16"; maximum size of sheet (paper or cardboard) is 8¾ x 20". **Speed:** 40 to 50 copies per minute.

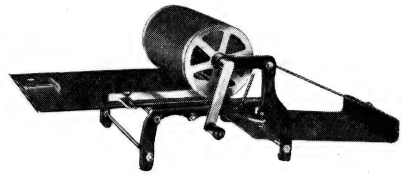
Equipped for duplication of typewritten forms, including all initial supplies .....$40.00

Equipped for autographic work, including all initial supplies..... 44.25

## UNIVERSAL ROTARY DUPLICATOR

Made by C. E. Morrison, 4 Fulton Street, Albany, New York. Sold direct and through specially appointed dealers and agents.

A new stencil duplicator, just put on the market, operating, as its name implies, on the rotary principle. Its distinctive feature is that two interchangeable cylinders are supplied with each machine, facilitating the use of two color impressions. The second drum is used for the second color, eliminating the usual necessity of wash-up on machines without this feature.



A special device provides against distortion of type lines in reproduction, regardless of the number of times the stencil is removed and relaced on the machine. Any standard make of stencils or inks may be used.

Maximum paper size 9 x 13 inches; maximum form size 7¼ x 10½ inches. Paper is hand fed; approximate speed, 20 impressions per minute. Adjustments of the stencil on the cylinder are provided; paper feed and gauges allow for accurate registration of the impression on the sheet.

One model only, including extra cylinder.....$24.50

(Continued from page 261)

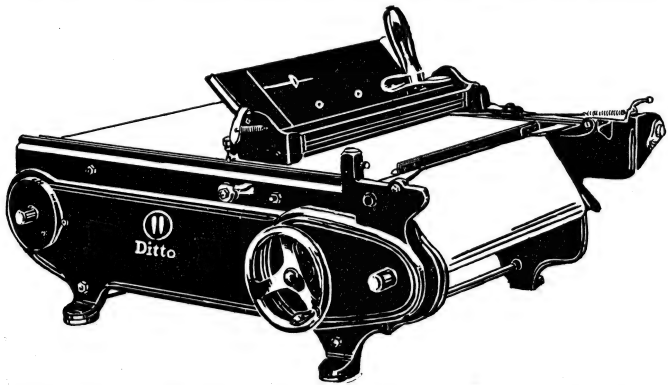
## EDISON-DICK—continued

### Type Effects on the Mimeograph

The A. B. Dick Company operates (at their main establishment) a special department producing stencils from type forms, which are filled in on the typewriter by the user and then run on the Mimeograph. The form (headings for bulletins, menus, etc.), is set in type which is then electrotyped and used as a pattern for the prepared stencil, called the "Formograph." Each stencil is impressed with the type form, and sent to the customer. After the blanks have been filled in on the typewriter, the stencil is run off in the usual manner.

## DITTO

Made by Ditto Incorporated (formerly known as The Duplicator Manufacturing Company), 530 South Dearborn Street, Chicago, Illinois. Sold exclusively through branch offices and salesmen throughout the country.




A flat bed gelatin film type of duplicator, having as its distinctive feature a traveling carriage which takes the paper to the copying surface and picks it up again, semi-automatically. Each copy is made with a single forward and backward movement of the carriage, which, mounted on rails, is propelled by hand forward and backward across the surface of the film. The original copy is placed between adjustable paper guides in the carriage and as the carriage is pushed forward, the sheet is gripped by a revolving rubber feed roller and impressed against the surface of the film. As the carriage is drawn back to its original position, the sheet is picked up and returned to the position of its original insertion between the paper guides, to be removed by hand. In the same way, blank sheets after being inserted in the carriage are carried to the film surface and withdrawn after being imprinted. The set of the paper guides being the same for the original copy and blank sheets, exact registration of all copies is provided. It is hand fed; sheets are inserted and removed from the carriage one at a time.

A fresh copying surface is presented, by winding the film from the rear to the front spindle by means of a winding mechanism and brake, operated from a hand wheel on the side of the machine. The old copying surface automatically renews itself after a period of approximately 24 hours. Each roll of film is 14½ feet long. Speed is dependent on the skill of the operator in inserting sheets and operating the carriage. Size of No. 2 model with stand is 28″ long by 38″ wide by 47″ high.

### Models and Prices

| | |
|---|---|
| Model No. 1, duplicating surface 8¾x17 inches | $150.00 |
| Model No. 2, duplicating surface 14 x17 inches | 160.00 |
| Model No. 4, duplicating surface 18 x34 inches | 225.00 |
| Tubular stand for Model No. 1, or No. 2, extra | 40.00 |
| Tubular stand for Model No. 4, extra | 45.00 |

Extra rolls of film with craft, fibre, or cloth backing can be obtained from the makers.

## ACMECLAY

Made by the American Duplicator Company, 80 Pearl street, New York City. Sold direct by mail.

The Acmeclay Duplicator consists of a metal lining filled with a clay composition and encased in a wooden frame. The composition does not contain any glue or gelatin and is, therefore, not affected by climatic changes. The operation and method of reproducing is the same as other duplicators of this class. It is provided with adjustable gauges for accurate registering of impressions.



### Models and Prices

(Including complete outfit ready for use.)

Model No. 610 with printing surface 6 x 10 inches .....$4.00

Model No. 1012 with printing surface 10 x 12 inches .....$6.00

Model No. 1218 with printing surface 12 x 18 inches .....$9.50

Other sizes are made up to 24x36 inches ranging in price to $37.50.

## BECK SELF-FEEDING DUPLICATOR

### (Also known as the Self-Feeding Iron Clad Duplicator)

Manufactured by the Beck Duplicator Company, 176 Broadway, New York City. Sold direct and through their specially appointed dealers and agents.

In general appearance, this machine is similar to the Speedograph, made by the same company. It is equipped with the automatic paper feed, but instead of the in-built impression roller, which is an integral part of the Speedograph, this machine utilizes an ordinary hand roller.

### Sizes and Prices

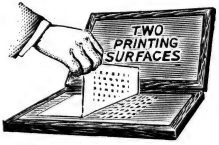
(Including All Necessary Initial Supplies)

No. 915 With printing surface 9 x 15 inches.....$50.00
No. 1415 With printing surface 14 x 15 inches..... 60.00
No. 1418 With printing surface 14 x 18 inches..... 75.00

## HEYER-IDEAL

Made by the Heyer Duplicator Company, 18 South Wells Street, Chicago, Illinois. Sold direct and through office equipment dealers.

A pan type of gelatin duplicator, made with two or four surfaces, in hinged frames.



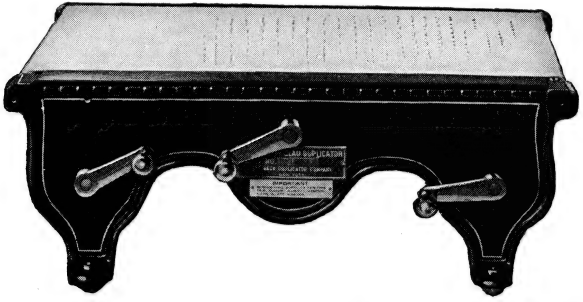

### Models and Prices

| Model | Size | 2 Surfaces | 4 Surfaces |
|---|---|---|---|
| No. 1 | 7″x10″ | $5.00 | $ 7.50 |
| No. 2 | 9″x11½″ | 6.00 | 9.00 |
| No. 3 | 9″x14″ | 7.00 | 10.50 |
| No. 4 | 11″x17″ | 9.00 | 13.50 |

Composition for refills: One-half of above list prices.

## IRONCLAD DUPLICATOR

Made by the Beck Duplicator Company, 476 Broadway, New York City. Sold direct and through their specially appointed dealers and agents.



This machine is similiar to the Speedograph, made by the same company, except that it is not equipped with an automatic paper feed, and uses a regular hand impression roller.

### Sizes and Prices

(Including all necessary initial supplies)

No. 915 with printing surface 9 x 15 inches.....$30.00
No. 1415 with printing surface 14 x 15 inches..... 35.00
No. 1424 with printing surface 14 x 24 inches..... 45.00
No. 1824 with printing surface 18 x 24 inches..... 51.00
No. 2124 with printing surface 21 x 24 inches..... 55.00
No. 2130 with printing surface 21 x 30 inches..... 75.00

Other sizes at corresponding prices are 9 x 24, 16 x 15, 16 x 24, 18 x 15, and 21 x 15.

## NATIONAL

Made by the National Duplicator Company, 114 Broad Street, New York City.

This is a simple composition type, pan duplicator, made in four models ranging from $2.50 for a 6x10 inch size to $7.50 for a 12x18 inch size.

## EFFICIENCY

Made by the Heyer Duplicator Company, 160 North Wells St., Chicago, Illinois. Sold direct by mail.

The Efficiency Duplicator is a flat bed type machine, using a roll film. It is hand fed.

### Models and Prices

(Including Complete Outfit Ready to Use)

Made in one model—printing surface 8½ x 18 inches.....$30.00

## GRAPHIC

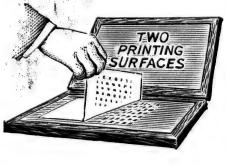
Made by the Graphic Duplicator Company, 228 West Broadway, New York City. Sold direct and through dealers.

A flat bed duplicator using a gelatine roll film. It is hand fed. Die stamped of steel, printing surface cannot warp.

### Models and Prices

(Including Complete Outfit Ready for Use)

No. 1 Printing surface 8¾ x 14 inches.....$35.00
No. 2 Printing surface 13¾ x 20 inches..... 45.00
No. 3 Printing surface 20¾ x 25 inches..... 60.00




# The IDEAL Duplicator

WILL PRINT

50 copies from pencil 60 copies from typewriter
100 copies from pen and ink

The quickest—cheapest—best Duplicator in the world for making 100 copies or less. Thousands in use. Liberal discount to dealers.

We can furnish supplies for any make duplicator. Write for catalog and discount sheet.

**THE HEYER DUPLICATOR COMPANY**
**18 South Wells Street :: :: :: Chicago.**

## THE SCHAPIROGRAPH MULTICOPIER

Made by the Schapirograph Company, 228 West Broadway, New York City. Sold direct and through dealers.

A flat bed duplicator, using gelatin film and is similar to the many other makes of machines of its type, except that it is enclosed in a wooden box with hinged cover.

### Models and Prices

(Including Complete Outfit Ready for Use)

| | | | | |
|---|---|---|---|---|
| No. 2 | Printing surface | 8¾ x 13 | inches | $20.00 |
| No. 3 | Printing surface | 13¾ x 19 | inches | 30.00 |
| No. 4 | Printing surface | 16 x 19½ | inches | 35.00 |
| No. 5 | Printing surface | 20¾ x 23½ | inches | 40.00 |

## SIMPLOGRAPH

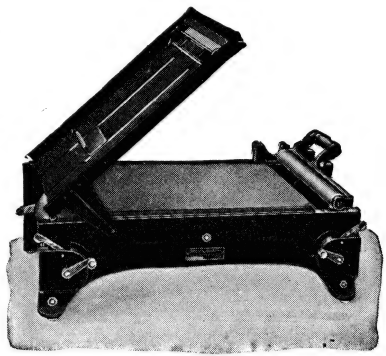
Made by the Simplograph Company, 83 Utica City National Bank Bldg., Utica, N. Y. Sold direct and by specially appointed dealers.

The Simplograph is a stencil duplicator utilizing a segment instead of the drum usually found on stencil machines. The machine has no bolts, gears or springs of any kind. Any stencil paper can be used. The stencil after being cut is attached to the face of the segment, which is perforated and through which the ink is fed. It produces the same kind of impressions as any rotary stencil duplicator, but has an added advantage in that impressions may be made in bound books or on any surface that could not ordinarily be fed into a rotary machine.

## SPEEDOGRAPH

Manufactured by the Beck Duplicator Company, 476 Broadway, New York City. Sold direct and through their specially appointed dealers and agents.

A flat bed type of machine, using a gelatin film wound on spools. Its paper feeding device is a principal feature. It feeds the sheets automatically to the copying surface, providing accuracy of registration, with a speed of 20 to 25 copies per minute. A supply of sheets is placed in the feeding frame, which, when drawn down to the bed of the machine, feeds a single sheet at a time to the exact position on the copying surface. The impression roller is then passed over the sheet, bringing it into full contact with the copying surface.



The impression roller is an integral part of this machine. It is easy running and adjustable to afford evenness of

## SPEEDOGRAPH—continued

impressions by maintaining correct and uniform pressure on the sheet as it is brought in contact with the copying surface.

Any number of clear copies up to 100 can be made from one original.

### Sizes and Prices

(Including All Necessary Supplies)

| | | Machine | Stand |
|---|---|---|---|
| No. 915 | With printing surface 9 x 15 inches | $ 90.00 | $25.00 |
| No. 1418 | With printing surface 14 x 18 inches | 120.00 | 30.00 |
| No. 1818 | With printing surface 18 x 18 inches | 150.00 | 40.00 |

## TWO-IN-ONE

Made by the American Duplicator Company, 80 Pearl Street, New York City.

A simple composition pan duplicator contained in a double frame and having two copying surfaces. It can also be supplied with four copying surfaces.

### Models and Prices

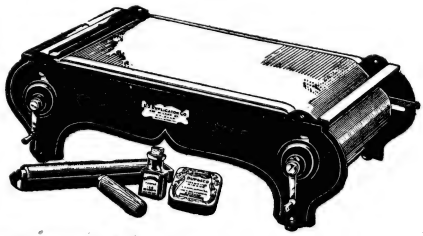
(Including Complete Outfit Ready for Use)

| | | |
|---|---|---|
| No. 1 | Printing surface 7 x 10 inches | $ 5.00 |
| No. 2 | Printing surface 9 x 11 inches | 7.50 |
| No. 3 | Printing surface 9 x 13½ inches | 9.00 |
| No. 4 | Printing surface 15 x 18 inches | 20.00 |

(Add 50% to above prices for four-surface outfits)

## UNITED STATES

Made by the U. S. Duplicator Company, 622 West Lake Street, Chicago, Illinois. Sold direct and through specially appointed dealers and agents.



Of the same general design and operation as other flat bed type duplicators of its type. It uses a roll film and is hand fed.

### Models and Prices

(Including Complete Outfit Ready for Use)

| | | |
|---|---|---|
| Model No. 1 | Printing surface 8¾ x 14 inches | $30.00 |
| Model No. 2 | Printing surface 13¾ x 20 inches | 45.00 |
| Model No. 3 | Printing surface 20¾ x 25 inches | 60.00 |

## UNIVERSAL

Manufactured by the American Duplicator Company, 80 Pearl Street, New York City. Sold direct by mail.

The Universal Duplicator is similar to many other flat bed type of machines, using a gelatin film wound on spools.

## UNIVERSAL—continued

### Models and Prices

It is made in ten sizes ranging from 9 to 21 inches wide and 15 inches long and from 9 inches to 21 inches wide and 24 inches long, priced from $30.00 to $52.00 for the 15-inch length and $45.00 to $67.00 for the 24-inch length. Prices include complete outfit ready for use.

## OPALOGRAPH

Made in England. Distributed in the United States by the Columbia Ribbon and Carbon Company, 69 Wooster Street, New York City. Sold through specially appointed dealers and agents.



This device combines features related to both gelatin process and stencil duplicators.

It resembles gelatin process duplicators in that it has a flat bed, and makes impressions by the offset process. But instead of having a gelatinized copying surface, it utilizes a sheet of special white glass, as a stone is used in lithography.

When hand writing or drawings are to be reproduced, the original is made on any kind of ordinary paper with a special ink sold only by the manufacturers. When typewriting is to be reproduced, it is cut on a wax stencil sheet, the same as when being prepared for ordinary stencil duplicators.

The glass plate is prepared with a chemical (a liquid supplied by the manufacturers) and dried off with cellulose wool, which is also specially supplied. The wax stencil sheet or the sheet of hand writing or drawing is placed face down upon the glass slab. The lid of the cabinet is then replaced and spring clamps, with which it is equipped, applied to produce and maintain a pressure for approximately two minutes. When stencil sheets are used. an ink pad, placed inside the cabinet cover, forces the special ink through the character perforations onto the slab.

When the cover is removed, the surface of the glass is apparently blank, the characters or designs being brought out when the plate is washed with a second chemical fluid. Although not etched, the design cannot be smutted, or removed until a special washing fluid is used. The ink is applied to the printing surface with a rubber roller; only the characters or design to be copied take the ink, the blank portions of the glass being impervious to it.

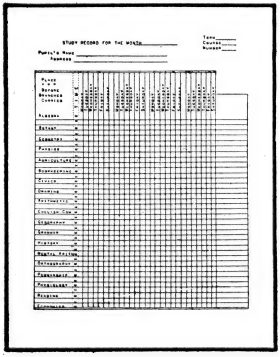
The making of copies is similar to other flat bed processes. The sheet is applied direct to the surface of the glass and pressure exerted by a rubber roller. Impressions are clear and unblurred and resemble those made with printers ink. They may be heavy or light, according to the inking. The speed of making copies compares with that of flat-bed duplicators. Any number of colors may be used. A chemical fluid is used to wash off the glass when a new subject is to be copied.

### Models and Prices

| Model | Size of Plate | Price |
|---|---|---|
| 1 | 9½ x 6½ inches, including all necessary initial supplies.... | $ 75.00 |
| 2 | 14¼ x 9¼ inches, including all necessary initial supplies.... | 100.00 |
| 3 | 14¼ x 18½ inches, including all necessary initial supplies.... | 150.00 |

Special sizes are made, ranging from 19¾ x 23¾ inches at $200 to 33½ x 39½ inches at $300.00.

# MIMEOGRAPH


STUDY RECORD FOR THE MONTH

FORMS AND ILLUSTRATED PUBLICITY

Greater speed and economy make the Mimeograph Process the standard stencil duplicating method.

Duplicates typewriting, handwriting, ruled lines, and illustrations at one operation. Prints on various kinds of paper. Operated by your office boy. A Mimeograph for every duplicating need, and priced accordingly.

One Dermatype stencil, costing but a few cents, is good for thousands of impressions, and may be filed and used again.

MIMEOGRAPH EDISON-DICK

# YOUR LETTERS

**SPEED**
**5,000 Copies per hour**

**ECONOMY**
**30c or 40c per thousand copies**




The Mimeoscope provides the easy tracing method of ruling and illustrating; thus enlarging the field of usefulness and value of the Mimeograph.

See detailed description in catalog pages.

To obtain literature, samples, and data applying to the Mimeograph uses in your particular business, address

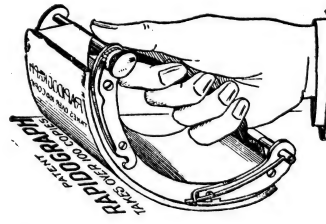
A. B. DICK COMPANY
742 W. Jackson Blvd., Chicago, Illinois.

MIMEOGRAPH
EDISON-DICK

## RAPIDOGRAPH

Made by the Duplico Manufacturing Company, New Brunswick, N. J.

The Rapidograph is a gelatin type duplicator. It consists of a metal segment to which is attached a gelatin coated sheet, on which the matter to be reproduced has been transferred in the same manner as with other gelatin or composition process duplicators. Impressions are made by operating the device with a rocking motion over the sheets to be imprinted. It produces the same kind of impressions as any flat bed pan or roll duplicator, but has the added advantage that copies do not curl and impressions may be made in bound books, on boxes or on linen, leather, cloth, etc.




### Models and Prices

(Including complete supplies for 100 originals)

Model No. 26 or 29, printing surface 6 x 9"..... $ 7.00
Model No. 39 or 312, printing surface 9 x 12"..... 10.00
Model No. 49 or 415, printing surface 9 x 15"..... 15.00


# U. S. Duplicator Co.

*622 West Lake Street* *CHICAGO*

*Manufacturers of the Improved Steel*

## *U. S. DUPLICATOR*

We make and sell high grade gelatine films threaded on spindles to fit any gelatine roll duplicator, at lowest market prices.

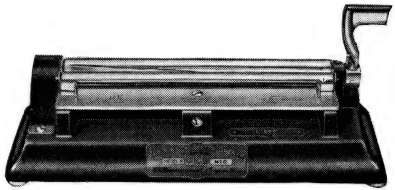
*Satisfaction guaranteed*

# Envelope Openers

## O. K. LETTER OPENER

Made by the O. K. Manufacturing Company, Incorporated. Main office and factory, Oswego, New York. Sold by specially appointed dealers and agents.

The cutting medium on this device is a steel cylinder one inch in diameter, having three integral winding shear edges, which co-operate with the cutting edge of the shear plate as the cylinder is rotated by the hand crank (on hand operated models), or motor (on electrically operated models). On the motor operated model, this cutting cylinder is driven by a direct worm gear at a velocity to present a shearing edge approximately 600 times per minute. Thus, when an envelope is inserted against the cutting cylinder, it is instantly opened.



Hand Operated Model

The slight shearing removed does not permit the cutting edges to reach coins, paper clips, pins, etc., or to injure the contents.

The cutting cylinder, in its revolution, is constantly wiped by an oil saturated felt, which places a film of oil over the cutting edges to prolong keen cutting.

The shear-plate is of steel and is provided with a means of adjustment for the opening of heavy bond, manila, or linen lined envelopes, as well as ordinary light weight envelopes. Operation is quiet.

The cutting cylinder may be removed and resharpened, usually at two year periods, by the manufacturers.

Speed is dependent on the skill of the operator in inserting envelopes. The usual speed is 40 envelopes opened per minute by hand operated models, and 100 envelopes per minute by electrically operated models.

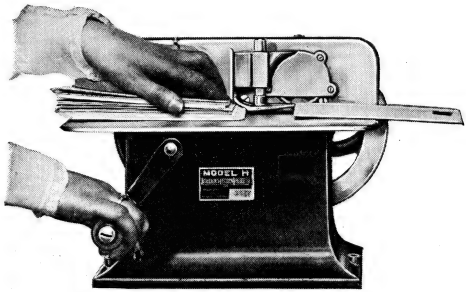
### Models and Prices

| | |
|---|---|
| Model 0B, hand operated for envelopes 6¾" and under | $ 20.00 |
| Model 1B, hand operated for envelopes 10½" and under | 25.00 |
| Model 2B, hand operated for envelopes 12" and under | 30.00 |
| Model E, electrically operated for either AC or DC current | 150.00 |
| Stand for electric model | 15.00 |

## LIGHTNING ENVELOPE OPENER

Made by the Bircher Company, Incorporated, Rochester, New York. Sold by their own sales force.

A device for opening mail envelopes at high speed. Hand models open envelopes at the rate of 200 per minute; electric models have a speed of 500 envelopes per minute.




Model H

In operation, the envelopes are placed on a feed table in a stack of forty or fifty in a feeding, and held by a slight pressure of the hand. They are then conveyed automatically, one at a time, by a rubber feed belt between two rapidly revolving disc knives, which cut a very small amount from the exposed edge of the envelope, and are then automatically carried into a stacker. It is designed to be used on a table or desk. The cutting knives are adjustable for envelopes of varying thicknesses, and they may be removed for resharpening.

### Models and Prices

| | |
|---|---|
| Model A-5, motor driven | $200.00 |
| Model H, hand driven | 95.00 |
| Model 30, hand driven | 45.00 |

Note: The difference between Model H and Model 30 is principally that of speed per minute.

*Good judgment can be exercised only after consideration of all factors in a case. The DIGEST is designed to give you all factors regarding business machines.*

## Catalog Section

# TARIFF ACT OF 1922

The following excerpts from the United States Tariff Act of 1922 are quoted for the ready reference of importers in the industry as covered by this Guide.

**Title 1.**

**Par. 372.** Cash registers and parts thereof, 25 per cent ad valorem.

Printing presses, not specially ing machines, 30 per cent ad valorem.

Combined adding and typewriting machines, 30 per cent ad valorem.

All other machines, or parts thereof, finished or unfinished, not specially provided for, 30 per cent ad valorem

## Basis of "United States Valuation"

(d) The United States value of imported merchandise shall be the price at which such or similar imported merchandise is freely offered for sale, packed ready for delivery, in the principal market of the United States to all purchasers, at the time of exportation of the imported merchandise, in the usual wholesale quantities and in the ordinary course of trade with allowance made for duty, cost of transportation and insurance, and other necessary expenses from the place of shipment to the place of delivery, a commission not exceeding six per centum, if any has been paid or contracted to be paid on goods secured otherwise than by purchase, or profits not to exceed eight per centum and a reasonable allowance for general expenses, not to exceed eight per centum on purchased goods.

For the purpose of this title the cost of production of imported merchandise shall be the sum of—

(1) The cost of materials of, and of fabrication, manipulation, or other process employed in manufacturing or producing such or similar merchandise, at a time preceding the date of exportation of the particular merchandise under consideration which would ordinarily permit the manufacture or production of the particular merchandise under consideration in the usual course of business;

(2) The usual general expenses (not less than ten per centum of such cost) in the case of such or similar merchandise;

(3) The cost of all containers and coverings of whatever nature, and all other costs, charges, and expenses incident to placing the particular merchandise under consideration in condition, packed ready for shipment to the United States and

(4) An addition for profit (not less than eight per centum of the sum of the amounts found under paragraphs [1] and [2] of this subdivision) equal to the profit which ordinarily is added, in the case of merchandise of the same general character as the particular merchandise under consideration, by manufacturers or producers in the country of manufacture or production who are engaged in the production or manufacture of merchandise of the same class or kind.

(f) The American selling price of any article manufactured or produced in the United States shall be the price, including the cost of all containers and coverings of whatever nature and all other costs, charges and expenses incident to placing the merchandise in condition packed ready for delivery, at which such article is freely offered for sale to all purchasers in the principal market of the United States in the ordinary course of trade and in the usual wholesale quantities in such market, or the price that the manufacturer, producer or owner would have received or was willing to receive for such merchandise when sold in the ordinary course of trade and in the usual wholesale quantities, at the time of exportation of the imported article.

# Envelope Sealers

(See also Postage Permit Printers)

Envelopes are run through a sealing machine to seal them. Therefore the most important feature on a sealer is the moistening device. It should be as nearly foolproof and give as nearly uniform results as is possible.

The design of the moistening device varies on the different makes. Some (mostly the lower priced machines), use a moistened wick or felt pad as the sealing medium. Others use a roller, in the same way as the felt pad is used, and as an improvement on a pad. The higher priced machines use a rotating metal disc, running with its lower edge in a reservoir of water. The gummed flap of the envelope is pressed against the disc, usually by a rubber pressure roller, applying a pressure rather than a brushing or wiping contact during the moistening process.

The consideration next in importance to the moistening, is the method employed to compress the flap of the envelope after it has been moistened to seal it.

The third and least important feature, is the feed. Some makes are equipped with a fully automatic feed; others are semi-automatic, requiring holding the envelopes in the hand against revolving feed rollers which separate and carry them one by one at high speed, into the machine. A few makes are designed for hand feeding, one envelope at a time.

## ACORN—THEXTON

Made by W. L. McKay and Company, 111 North Market Street, Chicago, Illinois. Sold through specially appointed dealers, and direct by mail.

Made in both hand and electrically operated models.

The sealing medium is a felt wick, moistened by a drip from a glass reservoir mounted above it, and by capillary attraction from a detached reservoir into which the end of the wick extends.

Envelopes are placed on a feeding board, and as they are carried into the machine by rubber feeding rollers, the flap is guided automatically over the wick, and moistened. The flaps are sealed as the envelopes pass between and are ejected by rubber pressure rollers.



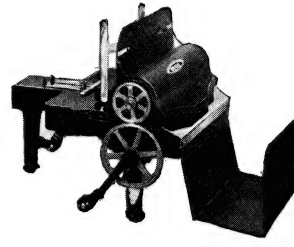
Model 4, Motor Driven

### Models and Prices

Model 2, hand operated, capacity 3000 per hour.....$38.50
Model 3, motor driven, capacity 8000 per hour..... 66.00
Model 4, motor driven, equipped with counter; speed 10,000 per hour. 82.50
Model 5, motor driven, equipped with counter, tubular stand and stacking tray; speed 10,000 per hour..... 98.00

## BEVAN

Made by the Howard Manufacturing Company, 21 Eddy Street, Providence, Rhode Island. Sold by specially appointed dealers and agents.

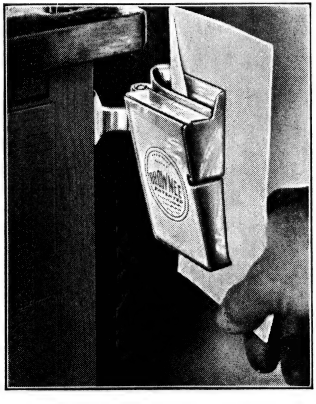


A distinctive feature of the construction and operation of this machine is that it seals envelopes crosswise instead of lengthwise. The envelope is picked up by the edge of the mechanically operated feed table and carried forward, where the proper amount of water is spread on the gummed portion of the envelope flap to properly seal it. The sealing operation is such that air in the envelope has no effect on the sealing. The feed is positive.

After being sealed, the envelopes are deposited and stacked in a receiving hopper. It will seal a thin envelope with an extremely thin enclosure and without adjusting, will also handle envelopes with thick enclosures. Speed, 200 envelopes per minute; the size of envelope has no effect on the rate of sealing.

The operating parts are metal and driven by gears from a hand crank.
Price: East of the Mississippi River, F. O. B. Providence.....$65.00
West of the Mississippi River, F. O. B. Providence..... 75.00

## BROWNEE



Manufactured by M. J. Brown Manufacturing Company, 2671 Salmon Street, Philadelphia, Pa. Sold through office equipment dealers, stationers, and the trade generally.

The Brownee envelope sealer is a small device to be clamped to the side of a desk, partition, etc. and can be swung out of position when not in use.

It consists of a reservoir to hold water from which a moistening pad is fed by means of an attached wick.

The envelopes are passed, one at a time, through the sealer and by means of guides, the envelope flap is automatically lifted, moistened, and brought under pressure as it is sealed. There are no moving parts and the hands do not come in contact with the device during operation.

### Models and Prices

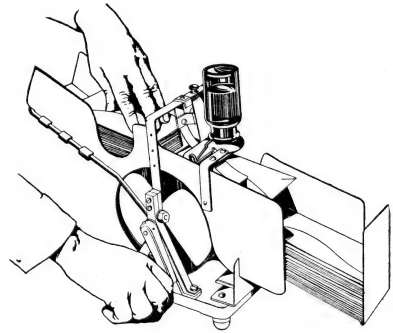
Made in one model only....$3.00

## ELLIOTT

Made by the Elliott Addressing Machine Company, Cambridge, Massachusetts. Sold by their own sales force through branch offices, and by specially appointed dealers and agents.

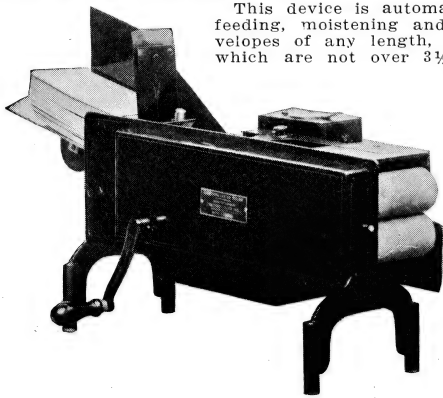
A light weight (12 lbs.) rotary sealing machine, having a speed of 13 envelopes in one second or 780 envelopes per hour. The construction provides for the passage of but one envelope at a time and the accurate sealing of any size or quality of envelope with contents of varying thicknesses. Equipped with automatic feed.

Price .....$45.00



## LIGHTNING ENVELOPE SEALER

Made by the Bircher Company, Incorporated, Rochester, New York. Sold by their own sales force.



This device is automatic in all its operations of feeding, moistening and sealing. It will seal envelopes of any length, of any width, the flaps of which are not over 3½ inches wide, and of any thickness up to ¼ inch. It will handle envelopes regardless of whether they are stacked with flaps telescoped or flat. Made in both hand and motor operated models, both of which are the same except for the driving medium.

Sealing is accomplished by a metal disc, receiving its supply of water from a tank, equipped with an adjustable feed valve which regulates the amount of water supplied to the disc. Envelopes are carried from an automatic feed hopper through the machine by conveyor belts and discharged at the rear from between upper and lower sealing rollers.

### Models and Prices

Model K, hand driven, speed 9,000 envelopes per hour.....$ 75.00
Model M, motor driven, speed 15,000 envelopes per hour..... 125.00

# MAIL-O-METER
# ENVELOPE SEALER AND STAMP AFFIXER

Made by the Mail-O-Meter Company, Detroit, Michigan. Sold by their own sales force.

A combined sealing and stamping machine that seals, stamps and counts 250 envelopes per minute. It is motor driven. Practically all parts are rotary in movement. The moistening of the envelope flap is accomplished by a metal disc revolving in a reservoir. The stamp supply (in reels), is contained in a glass-covered compartment, affording visibility as the machine operates.

In operation, a quantity of envelopes are held with a slight pressure against a feed roll. From this point, they pass separately to a series of rolls that carry them automatically through the machine. The envelope in passing through the machine, actuates the stamping mechanism. Each stamp can only be fed forward, cut off and moistened at such times as there is an envelope in position to receive it. Moisture for the stamps is obtained from a metal roller, which moistens each stamp after it has been cut from the roll. In passing through the machine, the flap



Check Endorser
(See Description, Page 164)



Model A
Envelope Sealer and Stamp Affixer

## MAIL-O-METER ENVELOPE SEALER AND STAMP AFFIXER—continued

of the envelope is automatically turned down over a brass disc revolving in a tank of water, and moistened. It is at this point that the envelope receives the moistened stamp. It then passes through the final sealing rolls, which affix the stamp securely and complete the sealing. Envelopes are ejected on their edges in a hopper, equipped with a compression stacker. There are no wicks, pads or sponges used for moistening.

All parts are made of metal, eliminating all gumming, clogging and the necessity of replacing the moistening parts.

The machine may be adjusted to seal without stamping, or to stamp without sealing. Will handle all mail matter varying in size from a small postcard, to an envelope 5½" high by 11½" long, and containing enclosures varying from a single sheet to one-quarter inch in thickness. The stamps are locked in the machine and recorded as they are affixed to the envelopes. Motors are furnished for any current or any voltage required.

### Models and Prices

Model A, motor driven, speed 250 complete operations per minute..$685.00

Model B, is a hand-operated machine, embodying the same general mechanical principles as Model A. The letter feed is horizontal instead of vertical as on Model A, and is automatic. Mechanically Model B presents the operating parts of Model A revolving on longitudinal horizontal axis ..... 210.00

Model C, is the same as Model B, except motor driven. Speed 4,000 pieces per hour ..... 310.00

It is understood that Models B and C are, or soon will be, discontinued.

## MAIL-O-METER ENVELOPE SEALER

Made by the Mail-O-Meter Company, Detroit, Michigan. Sold by their own sales force.

The Mail-O-Meter envelope sealer consists of the sealing and counting feature of the combination sealing and stamping machine. Its operation and capacity are the same. It is electrically operated and will seal and count 250 envelopes per minute. Moisture for the sealing is applied directly to the envelope flap, by a metal disc revolving in a tank of water. Made in but one size.....$300.00

## MULTIPOST SEALER (Model 00)

Made by the Multipost Company, Rochester, New York. Sold by specially appointed dealers and direct by mail.

This machine has just been placed on the market. It is motor driven, has a semi-automatic feed and is constructed on principles different from anything else on the market.

Envelopes are fed by being placed in an adjustable hopper, flat, with flaps down. An opening, directly beneath the position of the flap, allows the flap of the lowermost envelope to spring open and hang down.

A narrow rubber belt, having rubber caulks, spaced on its surface at one inch intervals, is driven at high speed over two pulleys, directly under the feed hopper. The caulks grip the lowermost envelope and carry it forward, lengthwise, and at the same time a guide slips under the flap to further open it. Adjustable stripper rolls prevent two envelopes from feeding at one time.

The moistening medium is distinctive. It is a brass form shaped to conform to the angle of the partly opened envelope flap, and has a channel approximately ⅛" x ⅛" cut in its face, through which free water is run.

## MULTIPOST SEALER—continued

The water is supplied by a pump from a detached reservoir under the device, located so as to catch the surplus water as it runs out of the channel.

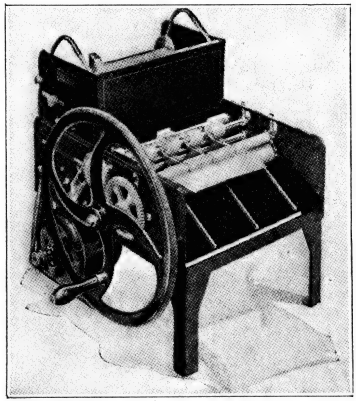
Pressure is applied to the flap as it passes over the channel, to secure thorough moistening of the gummed surface. The envelope, still gripped by the caulks on the feed belt, passes on to the pressure rollers, which compress the flap and eject the envelopes into a stacking hopper.

A speed of 12,000 envelopes per hour can be maintained. It is understood that this machine will be further developed at an early date to adapt it to print postage permit indicia on mail, in addition to sealing, and, equipped with a meter, to serve as a metering type of permit printer.

Price: Model 00. motor operated.....$150.00

## MULTIPOST AUTOMATIC LETTER SEALER (Model V)

Made by the Multipost Company, Rochester, New York. Sold by specially appointed dealers and direct by mail.



This machine is fully automatic in all its operations. It is hand or motor driven.

Envelopes are placed in a hopper, flat, with the flaps down (the addressed side up). In the bottom of the hopper an opening, the shape of an envelope flap, is cut, to allow the flap of the lowermost envelope to spring open and hang down.

The sealing medium is a metal blade, which by a reciprocating action, moves backward, over a water reservoir, where it is moistened on the under side by passing over a rubber roller, partly submerged in water. It then moves forward, under the opened flap of the bottom envelope, and pushing on the flap, moves the envelope under a set of rubber compression rollers, which moistens the gummed surface by pressing it against the wet blade. When the blade withdraws on the backward return stroke, another set of compression rollers flatten down the flap, and eject the envelope into a hopper. Envelopes are fed on their shortest dimension (top first) thus permitting a high degree of speed in feeding, due to the short space required for the feeding of each envelope.

A hinged arm is provided to fold over and rest on the envelopes in the hopper, to provide the necessary pressure to spring the flap open on the bottom envelope. A small pump carries water from a detached pan under the machine into the service reservoir, keeping a uniform level at all times.

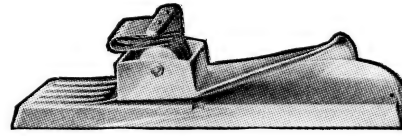
Envelopes measuring not over five inches in height, and having flaps not over 2½ inches high, can be accommodated. The manufacturers do not recommend its use for envelopes containing extremely bulky contents, weighing over two ounces, or for certain kinds of window or outlook envelopes.

Price: Model V, hand operated.....$125.00
With direct current motor, $150.00; with alternating current motor.. 175.00

## PULL-THRU MOISTENER AND SEALER

Made by Randolph, Bates and Brown, 101 Carew Building, Cincinnati, Ohio. Sold through stationers and office appliance dealers.

An all metal, simple and compact envelope sealer, designed for general office or individual desk use. It will seal any size envelope from a small pay size to a large catalog size.



Its construction embodies an open water reservoir in which three aluminum rollers are set, and a set of flap guides and pressure springs.

The flap of the envelope is moistened by passing it, with the glue side down, between a set of pressure springs and the rollers. Positive moistening is assured. The envelope is then turned over (address side down) and passed in a continuous straight line through the lower guide, under the reservoir and out under another set of springs which exert the correct pressure to complete the sealing. All springs are rust proof. Design permits of easy cleaning.

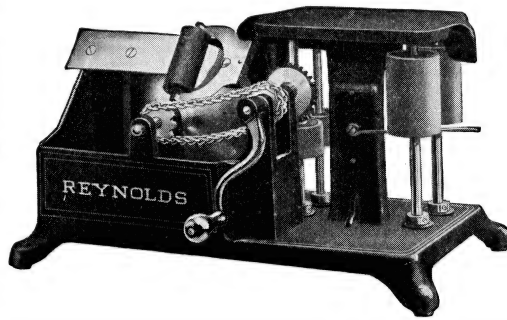
### Models and Prices

Made in one model only.....$2.90

## REYNOLDS

Made by the Reynolds Envelope Sealer Company, 109 North Market Street, Chicago, Illinois. Sold through specially appointed dealers and agents.

Envelopes are placed, one after another, over a beveled feed plate, and as the crank is rotated, they are gripped by feeding rollers and carried into the machine. The moistening device is a metal cone, or what might be called a convex formed disc, rotating with its lower edge in an open reservoir, applying a uniform supply of water to the flaps. No wicks or pads are used.




Made in both hand and motor driven models, taking any standard size envelope of any thickness. Because envelopes are individually fed, without gauges, all sizes can be handled without adjustment.

The electrically operated model is of duplex construction, being two separate feeding and sealing devices, side by side. Envelopes may be fed into both sides simultaneously, thus providing a double capacity, and a speed of over 12,000 sealed envelopes per hour. It will also seal catalogs and end-flap envelopes without adjustment.

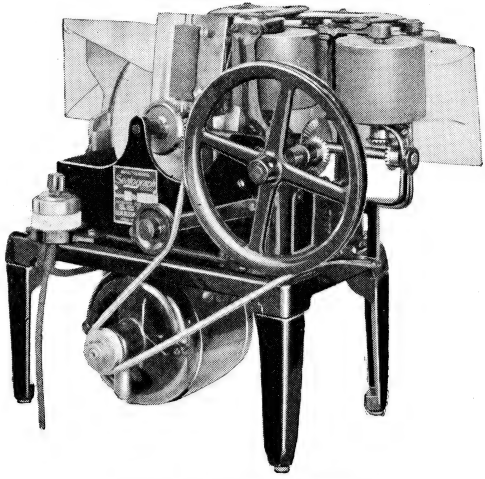
Price: Hand operated.....$45.00; Electrically operated.....$150.00

## SEALOGRAPH

Made by the Sealograph Company, 737 West Jackson Boulevard, Chicago, Illinois. Sold through specially appointed dealers and agents.

Made in hand (crank) operated and electrically driven models. Seals envelopes to 7 inches in width and of any length or thickness.

The sealing medium is a non-rustible metal moistening disc, which distributes water to the flaps of the envelopes. There are no wicks or pads. The driving force is applied through brass cut gears to two sets of rubber covered sealing rolls.



Model B, Motor Operated

### Models and Prices

Model A, Hand driven; capacity 100 envelopes per minute; seals all sizes of envelopes without adjustment.....$ 50.00

Model B, Electrically operated; capacity 150 envelopes per minute.. 85.00

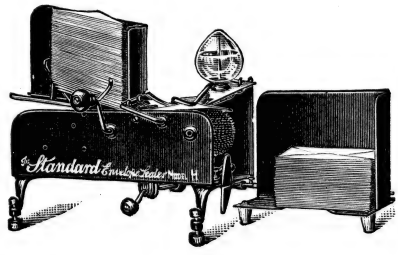
Model C, Electrically operated; equipped with automatic feed. Automatically feeds, counts, seals and stacks envelopes at a speed of 175 per minute. Standard equipment includes stand, on which motor is mounted, and envelope counter..... 175.00

Tubular steel stand with metal stacking tray for Models A or B..... 15.00

*Designed to be of practical help, we will appreciate your writing us specific instances where this volume reached its mark.*

## STANDARD

Made by the Standard Envelope Sealer Manufacturing Company, Everett, Massachusetts. Sold by specially appointed dealers and agents.




**Model F hand operated** sealing machine having a speed of 100 to 150 envelopes per minute. Designed to seal any size or shape of envelope up to, and including, 5 inches in width by any proportionate length.

In operation, thirty to forty envelopes, containing enclosures of varying thicknesses, are placed in a feed hopper and held by a slight pressure of the hand. As the crank is turned, the lowermost envelope is separated from those above it and at the same time, fed forward on to a corrugated rubber belt. As it travels, the flap of the envelope is raised and carried over a wick which moistens the gummed portion. The wick receives its supply of water by capillary attraction from a reservoir, contained in the overhanging section or arm to which the wick is attached.

The flap is next closed by a sealing-plate, held in position by the spring pressure and afterwards the envelope is delivered to a stacking hopper. If desired, further pressure can be exerted on the flaps by hand before the gum on the flaps has hardened.

Price ..... $40.00

**Model H hand operated** sealing machine having a speed of 150 to 200 envelopes per minute. Designed to seal any size or shape of envelope up to and including 7 inches in width by any proportionate length. The feed hopper has a capacity of 125 envelopes.

Operation is the same as Model F, above described, except that it is speedier and more positive. The moistening medium is a roller, partly submerged in water which is supplied at the same time and in the right amount, from a filler bottle, located at the top of the machine.

Price ..... $60.00

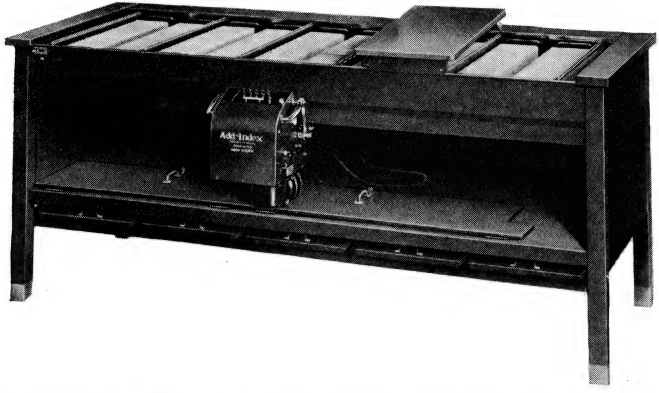
**Model M motor operated** sealing machine having a speed of 200 to 250 envelopes per minute. Designed to seal any size or shape of envelope up to and including 7 inches in width by any proportionate length. The construction is the same as Model H, above described, except that it is motor driven. The power is transmitted direct from the motor shaft to the feed pulley, thereby eliminating the necessity of belts or gear connections.

Price ..... $120.00

# Finding and Filing Devices

## ADD INDEX

Made by the Add-Index Company (Successors in the manufacture of this device to The Watters Corporation, St. Louis, Missouri), general offices: 120 Broadway, New York City. Sold by their own salesmen.




A device consisting of a metal cabinet containing one to ten card filing trays, under which is suspended a movable selecting device operated from a keyboard.

The System is based on numbers in definite series order, each card being identified and found or filed according to its last three given numbers. Each tray has a capacity of one thousand cards. The maximum capacity of each unit is ten thousand 6 x 8 inch, or eight thousand 8 x 10 inch cards. Usually the cards in each tray are numbered from 1 to 999 of different series of thousands. Each tray is exclusive of all others in each operation.

The finding of any card that has been filed, in correct or incorrect position, or the locating of the correct position for filing a card, ordinarily is accomplished with instant speed and is entirely mechanical.

The finding machine (or selecting device) is mounted on a track allowing it to be moved freely to the operating position for each tray. It is equipped with a keyboard having ten number keys, a reset key, and a multiple digit key. The depression of three keys, representing the last three figures in any thousand series, instantly locates any desired card by elevating it three-eighths of an inch above all other cards in the tray. The selecting mechanism is motor driven, and functions immediately upon the depression of the third key in any combination. Automatic safety locks provide against damage to the mechanism through carelessness or misoperation.

In filing a record, the next or nearest preceding card is projected to show the correct filing location. A card can be found and immediately projected regardless of whether it is filed in correct or incorrect position. The multiple digit key provides for the simultaneous projection of all cards having numbers ending in the same digit in each tray. By this

## ADD INDEX—continued

feature, a record, misfiled as much as 10,000 places away from its proper position can be found in a matter of from one to three minutes.

Cards are specially made in a series of ten different designs, agreeing with the mechanical formations as set up in the machine from the keyboard.

The cabinet is steel, in olive green finish, with double wall construction, insulated throughout against damage by fire, heat, water or chemicals. Removable covers are asbestos lined. When inactive and closed, the entire machine is locked.

### Models and Prices

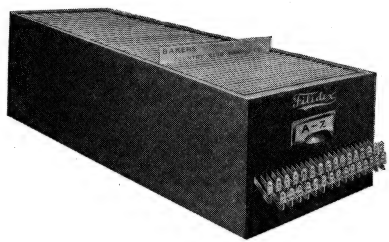
Standard Models: 10 trays for 6 x 8 cards or 8 trays for 8 x 10 cards $1750.00
Special Models: 8, 6 or 4 trays, graduated in price down to..... 1375.00

All models may be rented on a term contract basis of $40.00 per month. Prices are F. O. B. St. Louis and do not include cards.

## LEDERMAN
## (Formerly Filedex)

Made by the Lederman System, Incorporated, (Formerly known as the Filedex Corporation of America), Green Bay, Wisconsin.

A system of card filing embodying a mechanical means of quickly locating one or any number of desired classifications.




The finding mechanism is of unit construction, inbuilt in steel file drawers, each holding 350 standard 3 x 5, 4 x 6, 5 x 8, or 6 x 9 inch cards. A set of keys, indexed alphabetically and/or numerically are mounted on the lower front of the drawer and connected with a rod extending back the entire length of the drawer.

Standard index or address cards are equipped for filing by attaching to the lower edge, a holder of special design, having corrugations equal to the number of keys, into which are attached clips to correspond with all index divisions under which the card might be classified. These clips rest on the rod, attached to the key of the same letter as the clip. Cards may be filed anywhere in the drawer without reference to position or order. No index guides are used. When a card is desired, the key is pressed, and the card (and all other cards having a clip to correspond with the key) raises about one inch above all other cards in the file.

Cross indexing or group arrangements are provided by placing several clips on the same card, thus, all the names in one state or division, may be produced by one key, and particular names or other classifications in all states (including those produced by the first operation) may be found by another. A tap at the top of each card returns it to normal position.

### Models and Prices

| Card Size | 1 Drawer Unit Model | 1 Drawer Unit Price | 2 Drawer Unit Model | 2 Drawer Unit Price | Tops Price | Bases |
|---|---|---|---|---|---|---|
| 3x5 | L | $35.00 | LL | $ 78.00 | $3.00 | Bases in four sizes from 7" to 24" high, range from $6.50 to $10.50. |
| 4x6 | E | 40.00 | EE | 88.00 | 3.00 | |
| 5x8 | D | 65.00 | DD | 138.00 | 3.00 | |
| 6x9 | R | 80.00 | RR | 170.00 | 3.50 | |

# Folding Machines

## (For Office Use)

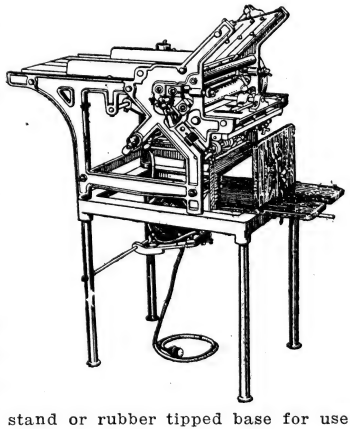
## ALDRICH

Made by the Liberty Folder Company, Sidney, Ohio, exclusively for the Lisenby Manufacturing Company, 225 North Michigan Avenue, Chicago, Illinois. Sold through specially appointed dealers and agents.

A high speed, compact machine for office use to fold letters, price lists, statements, covers, pamphlets, envelope enclosures, etc. It makes two parallel folds at one feeding.

### Specifications

A speed of from 10,000 to 20,000 folds per hour is maintained; handles sheets 5½ x 6 inches to 11 x 17 inches, making standard or accordeon fold as desired.



**Adjustments** for various styles of folds are controlled by three thumb screws. The folding mechanism is tapeless. The sheets are combed into the machine between two metal gauges and may be fed without regard to timing. The sheet passes directly from the table into the first fold rolls. Set at normal, two folds are made. A shift lever cuts out the second fold if only one fold is desired.

**Construction:** Folding rolls are solid steel, turned and knurled to accuracy, driven by machine-cut gears, mounted in oilless cushion spring bearings in a heavy cast iron frame. Equipped with electric motor, ready for immediate use, operating from ordinary lamp socket. Occupies floor space of 19 x 33 inches; weight 125 pounds. Mounted on either a tubular stand or rubber tipped base for use on table, on option of purchaser.

Price complete ..... $370.00

## BAUM HIGH DUTY FOLDER

### (Formerly known as Model No. 55 Aldrich High Duty Folder)

Made by the Liberty Folder Company, Sidney, Ohio, exclusively for the Lisenby Manufacturing Company, 225 North Michigan Avenue, Chicago, Illinois. Sold through Russell Ernest Baum, national distributor, 37 South Broad Street, Philadelphia, Pennsylvania, and his specially appointed dealers and agents.

A high speed folder for office use, making three folds in one feeding in any combination, such as:

One right angle fold followed by two parallel folds at right angles to the first fold;

Two parallel folds, or one or two right angle folds;

Any style letter fold for either No. 6¾ or No. 10 envelopes, either standard or outlook style;

Also handles 4, 6, 8 and 16 page forms.

## BAUM HIGH-DUTY FOLDER—continued

### Specifications

A speed of 6,000 folded sheets per hour is maintained, making any number of folds up to three; handles sheets 5½ x 6 inches to 12 x 18 inches. Sheets are fed in the machine endwise between two metal guards and are fed under equalizers which prevent curled corners turning back.

**Tapes:** A combination of tape and tapeless design; using only three tapes on the entire machine to prevent sheets rebounding. Tapes do not go around the rolls.

**Registration:** On the first and third fold, the registration is automatic. The second fold is registered with a standard book header, graduated with one screw adjustment.

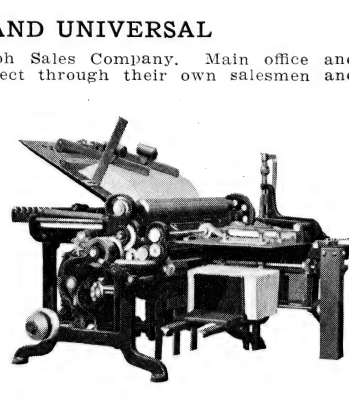
**Adjustments:** Set up for various styles of folds is controlled by five set screws. The only adjustment on the first and third fold is the graduated stop, controlled by one screw. The second fold is controlled by a single screw in the header; changed from two to three folds by a shift lever while the machine is in operation. Folded sheets are delivered into an eccentric driven push packer.

**Construction:** Folding rolls are of solid steel, turned and knurled to prevent the sheet from slipping, and ground to accuracy; equipped with adjusting screws for different weights of stock; driven by heavy machine cut gears, mounted in semi-oilless bearings in a heavy grey iron frame, olive green finish. Trimmed with black enamel; occupies floor space of 30 x 42 inches; weight, 500 pounds. Equipped with electric motor, operated from any lighting circuit.

Price complete ..... $495.00

## MULTIGRAPH AND UNIVERSAL

Made by the American Multigraph Sales Company. Main office and factory: Cleveland, Ohio. Sold direct through their own salesmen and branches.



**Universal Folder Model No. 17** is a compact machine, a little larger than a typewriter and is intended for office use in making all ordinary folds usually required for letters, circulars, booklets, and folders. It will make one fold in a sheet 5½ x 6 inches and larger, two folds in a sheet 5½ x 8 inches and larger, or three folds in a sheet 8 x 8 inches and larger. Its maximum paper capacity is a 12 x 18 inch sheet. It has an automatic feed, motor drive, and will deliver 5,000 pieces per hour. The devices for one, two and three folds are separate attachments.

**Multigraph Folder No. 19** is a smaller machine, designed for the folding of letters and statements and is not recommended for booklets, circulars, etc. It will make from one to five folds. It does not use any attachments, the changes for the different folds being made by adjustments. It has an automatic feed, is motor driven and will deliver 4,800 pieces per hour.

## MULTIGRAPH AND UNIVERSAL—continued

**Multigraph Junior Folder Model No. 58** is a simple, hand operated office folding machine provided with adjustments for the various kinds of folds. It folds any size sheet up to 8½ x 11 inches with a speed of 4800 pieces per hour.

### Models and Prices

| | |
|---|---|
| Universal Folder No. 17, stripped of attachments | $138.00 |
| Motor, direct or alternating current | 30.00 |
| One fold attachment | 30.00 |
| Two fold attachment | 72.00 |
| Three fold attachment | 105.00 |
| Multigraph Folder No. 19, electrically operated, complete | 295.00 |
| Multigraph Junior Folder No. 58, hand operated, complete | 100.00 |

## UNIVERSAL

(See Multigraph and Universal Folders.)

## DICK

Made by A. B. Dick Company, 730-44 West Jackson Boulevard, Chicago, Illinois. Sold through branch offices and specially appointed dealers and agents throughout the world.

A high speed office folding machine. Although this device has been marketed for several years, no extensive effort has been made recently to promote its sale. It is understood that orders are not now solicited, but present and other users will be supplied.

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*It has taken over three years to compile the book you are now reading. You cannot, therefore, expect to assimilate its entire contents in one reading.*

# Inter-Communicating Systems

## KLEINSCHMIDT TELEGRAPH TYPEWRITER

Made by the Kleinschmidt Electric Company, Incorporated, Long Island City, New York. Installations planned and made by their own engineering staff.

An electrically operated typewriter that automatically transmits messages from one point to another. It provides for the transmission of information in a definite, permanent form to any number of distant stations. The message as typed on the sending typewriter is transmitted to every other typewriter connected; each receiving machine typing the form automatically in exactly the same way and at the same time as it is written on the sending machine. Tabulated forms and duplicate copies can be made as with any standard typewriter. The paper is fed from a continuous roll mounted on a frame in back of the machine.

The typewriter unit is a special three row keyboard, double shift machine, having a standard carriage and control features. It can be operated by anyone without previous experience.

The medium by which the message is transmitted is a continuous paper tape in which are punched combinations of perforations by the sending machine. When this tape is placed in the transmitter device, which is part of the system, the perforations in the tape actuate the keys of the distant typewriter, re-writing the message in the same form as it was originally written on the transmitting typewriter.

The commercial machine is a development of an earlier model originally designed for telegraph use. It is now available for use in hotels, banks, railroad companies and any other line of business where information is to be transmitted to one or any number of distant points.

Prices for each installation will be quoted on survey by the manufacturers.

## LAMSON

Made by the Lamson Company, Incorporated. General offices and works, Syracuse, New York. Sold through branch service stations located in the principal cities throughout the country.

This concern are designers and builders of an extensive line of automatic conveying systems for saving labor in handling cash, papers and merchandise in stores, offices and industrial plants.

Several different types are made, such as pneumatic tube systems, operating by compressed air through continuous tubes, connecting departments, branches, buildings or establishments; cash and parcel carriers operating on a continuous belt; electric cable carriers; gravity and belt conveyors; elevators spiral conveyors, etc.

The systems are built into the office or plant where they are used, and the price of the equipment and installation, therefore, varies considerably.

### Junior Tube System

A new two station unit recently put on the market, is designed to convey papers quickly from one department to another, for use in offices, banks, brokerage houses, factories, etc., where a built-in multi-station tube system would prove too elaborate, and where the smaller foot-power system would not have sufficient capacity.

## LAMSON—continued

The operating principle is the same as that employed in the larger sizes of pneumatic tube systems made by this company. The carriers are cylinders projected through a continuous tube by air pressure generated by a blower.

The entire power plant, consisting of a motor, blower and power economizer, is contained in an oak or mahogany finished cabinet, measuring on its base 26x20" and 52" high. Either end of the tube may be used as a receiving or despatching station. When the conveyors are despatched from the end at which the power plant is located, they are carried by air pressure to the other end or "Out Station." When despatched from the "Out Station", an electric switch control reverses the air current, creating a vacuum, which carries the conveyor through to the cabinet terminal.

As the cabinet contains all of the moving parts of the system, it can be installed or moved in a few hours. The cabinet is put in position, the tube is hung to ceilings or walls by hangers and the "out" station terminal chute or basket is mounted on any convenient table, desk or other piece of furniture.

### Models and Prices

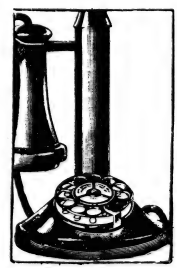
The average installation of a Junior Tube System, including approximately 100 feet of tubing, with all bends, joints, hangers, and labor necessary for installation, is approximately.....$500.00

The nature of and condition under which installation is made, govern the definite price.

## P-A-X

Made by the Automatic Electric Company. Home office and factory, Chicago, Illinois.

A private inter-communicating telephone system, similar in its operation to the automatic telephone equipment recently adopted in the larger cities. It augments and completes, but neither supplants nor connects local or long distance telephone service.



The number of the department desired is dialed on the calling instrument. The call goes through the automatic telephone switchboard and automatically rings the bell connected with the telephone in the called department.

The construction permits of several lines being connected at one time to allow the holding of a joint discussion by several executives.

The service includes code call, conference, watchman's service and other inter-communicating features.

The price of the equipment varies and is dependent upon the size of the equipment and the material and labor used in installation.

## NATIONAL ELECTRIC CREDIT SYSTEM

Made by the National Cash Register Company, Dayton, Ohio. Sold through their own sales force through branch offices located in the principal cities throughout the country.

An equipment for use in department stores to provide for telephonic conversation between the clerk making the charge sale and the Credit Department, with a means of approving or authorizing the credit mechanically and permanently on the sales slip.

The equipment consists of: (1) a central telephone switchboard, located in the Credit Department; (2) a motor generator set, which supplies the proper current for operating the system; (3) individual telephone instruments, called "Charge Phones," located in various departments throughout the store.



Charge Phone For Selective Call System

### Operation

The sales person or wrapper inserts a charge slip in the phone and presses a button to signal the operator, known as the "Authorizer," in the Credit Department. This causes a signal light to appear on the authorizer's switchboard. The authorizer plugs in and presses a ringing button on the switchboard, setting up a buzzing sound in the calling phone to announce to the sales person that she is ready to give her attention to the call.

The clerk then telephones the name and address of the customer and the amount of the purchase. The authorizer's receiving phones are of the amplifying type, permitting the clerk to speak in a low tone of voice, so as not to be overheard by the customer, and yet be heard distinctly by the authorizer.

If the authorizer approves the sale, she presses a stamping button on the switchboard, causing the printer and perforator, (built into the charge phone), to print a notation on the sales ticket like this:

**-12-Sep-14-23-CH**

Phone No. Date Charge

At the same time, the perforator device punches a design of six holes in both the original and duplicate of the charge sales slip or address label. The purpose of this perforated design is to denote to the shipping room that the charge has been verified, and acts as an authority to deliver the package.

If the authorizer does not approve the charge, she so advises the sales person over the phone. She may request the customer to call at the credit office, or give such other instructions to the sales person as she may deem advisable.

## NATIONAL ELECTRIC CREDIT SYSTEM—continued

### Types

Two distinct types of systems are built. They vary only in the way the calls are received at the authorizer's switchboard. One type is designated as the "Direct-call" system; the other, as the "Selective-call" system.

**Selective-call type** has a multiple operator type switchboard for dividing the credit department into sections, (alphabetical or other divisions), each, with an authorizer. Each charging phone is provided with as many calling buttons as there are switchboard units. Thus, one authorizer may be called for names which come within one alphabetical section. Each authorizer passes on the charge transactions of customers whose names are in her division, regardless of the department or location in which the calling phone is located.

**The Direct-call type** is designed for smaller establishments. Each telephone in the system is connected with but one terminal in the authorizer's switchboard. Thus all calls from a certain charge phone can be answered only by the authorizer in whose switchboard section that phone line terminates. On Direct call systems of more than two desks, all calls are received on two desks, so that if one authorizer is busy, the other can take the call.

### Prices

**Direct Systems:**

Type B, 20 line system for one authorizer, 1 desk.....$ 625.00
Type A, 20 lines, 1 to 2 authorizers, 1 desk..... 1,000.00
Type A, 40 lines, 1 to 2 authorizers, 1 desk..... 1,075.00
Type A, 40 lines, 1 to 4 authorizers, 2 desks..... 1,575.00
Type A, 60 lines, 1 to 4 authorizers, 2 desks..... 1,725.00
Type A, 80 lines, 1 to 4 authorizers, 2 desks..... 1,875.00

**Selective Systems:**

Type A, 60 lines, 1 to 4 authorizers, 2 desks..... 1875.00
Type A, 80 lines, 1 to 8 authorizers, 4 desks..... 3575.00
Type A, 100 lines, 1 to 8 authorizers, 4 desks..... 3975.00
Type A, 120 lines, 1 to 8 authorizers, 4 desks..... 4375.00
Type A, 140 lines, 1 to 12 authorizers, 6 desks..... 6875.00
Type A, 160 lines, 1 to 12 authorizers, 6 desks..... 7475.00
Type A, 180 lines, 1 to 12 authorizers, 6 desks..... 8075.00

Prices include all power equipment, switchboard and authorizers' phones, but do not include labor and material used in installation, or any charge phones or stamping and perforating devices.
Extra for each charge phone, including stamping and perforating device .....$60.00

## TELAUTOGRAPHS

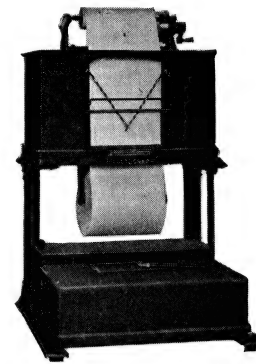
Made by the Telautograph Corporation, 438 West 37th Street, New York City. Systems planned and installed by their own engineers.

The Telautograph is a systematic installation of electrical instruments for the instantaneous transmission of handwriting over wires to and from any number of distant points, in adjoining departments, buildings or cities. It is designed for use in banks, offices, factories, hospitals, hotels, or in any establishment where inter-department communication is desirable.

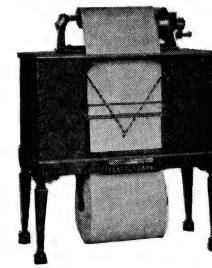
## TELAUTOGRAPHS—continued

The system comprises three distinctive instruments: (1) Transmitting stations, which send and receive messages (2) Receiving stations, on which messages are received only (3) Selecting switch keys permitting the proper selecting of distant stations.

All messages are permanently recorded in indelible ink (identically reproducing the handwriting of the sender) on rolls of paper contained in both the sending station and each of the stations connected. It is silent in operation. If a question is asked, a reply from the distant station appears directly below the question on both ends of the line, providing a permanent record at each station. One person only is required to complete the sending and delivery of a message. The distant machine will automatically record the message, and if the message be one of particular emergency, the party on the distant end of the line can be called by a signal, which can be either a bell or gong, or an ordinary buzzer.



Transmitting Station



Receiving Station

**Transmitting Stations**

Anything written on these stations is instantaneously reproduced in the exact handwriting of the sender, at one or more distant stations. The number of connections is controlled by the selecting switch keys, as described below. These stations also receive messages. All messages, both outgoing or incoming, appear on one roll of paper at each station connected.

**Receiving Stations**

These instruments receive messages originating at different transmitting stations, but do not transmit messages.

**Selecting Switch Keys**

Installed with transmitting stations only and are necessary for the proper selecting of a distant station or stations. Messages may be sent selectively to one or collectively to all stations.

## Models and Prices

Prices vary according to the type of service rendered, and are dependent upon the amount of distance and connections required. Fees on a rental basis, are as follows:

Transmitting instruments, each, per day.....$ .35 to $ .45
Receiving instruments, each, per day..... .20
Receiving Switch Keys, for each key in use, per annum..... 1.50

A specially trained staff of engineers is maintained to plan, estimate and supervise all installations. Branches are maintained in 32 cities in the United States.

# Label Pasting Machines

## POTDEVIN

Made by the Potdevin Machine Company, Brooklyn, New York. Sold by specially appointed dealers and direct by mail.

This machine applies a coating of cold fluid adhesive, to the entire surface of labels any size, from one inch square, up to large labels with one dimension less than six inches.

A brass cylinder rotates, as the crank is turned, in a reservoir containing the adhesive. The label is inserted with the printed side up, in a feedway at the front of the machine, and is gripped by two rollers which press the unprinted side against the distributing cylinder. An adjustable device regulates the amount of paste the machine applies, avoiding all excess at the edges of the labels when they are pasted on the products.

Stripper fingers in back of the distributing roller guide the label back to the operator after it has been coated, with the paste side up. The construction provides against the possibility of any adhesive getting on the printed side of the label. But one complete revolution of the crank is necessary to feed, coat and eject a label.

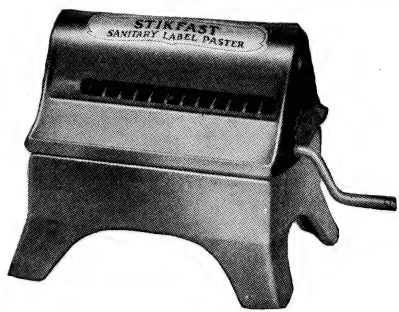
The machine is constructed of brass and enameled iron to withstand the acids of the paste.

### Models and Prices

Hand operated model, taking labels up to 6 inches in width.....$18.00
Motor driven model, same as above..... 45.00
The manufacturers of this machine also provide models equipped with a conveyor, and several other larger sizes of pasting, gumming and gluing machines.

## STIKFAST

Made by Bert Jones, Republic Building, Chicago, Illinois. Sold direct and through specially appointed dealers and agents.




Designed for the mechanical application of mucilage on address, package or any other kind of paper labels. Permits the exclusive use of inexpensive gummed labels. A single turn of the handle draws in the label, rules the underside with heavy parallel lines of mucilage, ⅜" apart, and ejects it at a convenient angle to be grasped by the hand and applied to the package. It provides speed, accuracy and cleanliness.

The construction is all metal, rustproofed. A series of discs, having milled edges are spaced at ⅜" intervals on a shaft, and suspended in a reservoir in which the mucilage supply is placed. As the

# STIKFAST
## Sanitary Label Paster




*Used in all lines of business. Sticks labels faster. Saves all brushes and two-thirds of the mucilage.*

*(See description in Catalog Section)*

3 Sizes:
5¼ in., 9 in., 12 in.

A **THREE-FOLD ECONOMY** for the Mailing and Shipping Department. A turn of the handle, a single pressure of the label to the package, and the whole surface adheres evenly and securely. It rules the underside of the label with heavy parallel lines of mucilage. Also made to gum entire surface. Permits exclusive use of inexpensive un-gummed labels. "Stik-fasts" offer a cheaper, quicker and neater way to label your merchandise.

**The "Stikfast" Label Paster** is indispensable in the Mailing Department, where speed, accuracy and cleanliness are required. Department stores use "Stikfasts" to paste address wrappers from sales slips. Marshall Field & Co., Chicago, use 500 at their Wrapping and Mailing desks; Carson, Pirie Scott & Co., 250; and The Fair Store 110.

**5¼ inch "Stikfast".....$10.00**
**9 inch "Stikfast".....$15.00**
**12 inch "Stikfast".....$20.00**
**1 gallon No. 1 mucilage..... $1.00**
**1 gallon No. 2 mucilage..... $1.25**

The 5¼-inch machine pastes the standard 5-inch American Express labels. Each machine pastes labels of any size from a postage stamp to nearly as wide as the machine itself. No 1 mucilage used for pasting to wrapped packages or fiber boxes.

The larger sizes are most needed by fruit packers and box freight shippers. With them should be purchased our specially prepared waterproof mucilage which will hold labels indefinitely in refrigerator cars. $1.25 per gallon. 60c per gallon in quantity lots.

*Substantial Discounts for Quantity Orders of Machines or Mucilage. At least one gallon of mucilage must be included in each initial order. In ordering state size of each label used, and if pasted to paper, wood, tin or glass.*

***The best opportunity in this guide for salesmen and dealers.***

**BERT JONES**
**Republic Building**
**CHICAGO**

## STIKFAST—continued

handle (at one end of the shaft) is rotated, mucilage is carried on the edges of the discs to the surface of the label. As the label passes through, pressure is exerted on the printed side by an upper set of discs intermediately spaced with the distributing discs (so as not to come in contact with the mucilage) driven from a handle by a simple two-gear arrangement.

### Models and Prices

5¼ inch label capacity (for express and smaller labels).....$10.00

9 inch label capacity (for fruit, vegetable boxes and other large labels) ..... 15.00

12 inch label capacity (for fruit, vegetable boxes and other large labels) ..... 20.00

Special discount on quantities of ten machines or more.

| Mucilage: in lots of (gallons).... | 1 | 5 | 10 | 30 | 60 |
|---|---|---|---|---|---|
| No. 1 for pasting paper to paper. | $1.00 | $ .75 | $ .60 | $ .46 | $ .36 |
| No. 2 (waterproof) for pasting paper to wood or tin..... | 1.25 | 1.05 | .90 | .75 | .65 |

*Manufacturers are invited to submit catalogs, price lists and announcements of new products for inclusion in future editions.*

# Mailing Machines

See

Envelope Sealers
Permit Mailing Machines
Stamp Affixers

The Pruitt Company

CHICAGO, U. S. A. Tel. Franklin 2118 or 5235

Dictating Machines Duplicating Machines
Sealers, Multigraphs

Folders, Check Writers Addressing Machines
Multicolor Presses

Our prices allow you to sell at about half the manufacturer's price
Cash in on the next lead by telling us what the prospect wants

*We Carry Parts and Supplies for All Makes*

***Our friendly cooperation will make you additional "pick up" profits out of your regular line.***

# Numbering Machines

## AMERICAN

Made by the American Numbering Machine Company. General offices and factory, Atlantic and Shepherd Avenues, Brooklyn, New York. Sold through stationers and dealers, and by their own representatives.

A distinctive feature of this make of numbering machines, is that the number to be imprinted is visible in a set of dials in the front of the machine, enabling the operator to know at all times, the next number the machine will print.

A wide variety of all styles of type faces and different combinations of movements is made. Letter or fraction wheels are furnished if desired, engraved with any nine characters or less. Models are also supplied to print dates instead of numbers; one and two wheel models to print words only or words and numerals (for use in hoisery mills, shoe factories, etc.) are also made.

The construction of the die wheels on number printers is steel, engraved and hand trimmed. Wheels on dating machines are nickel bronze. All models are inked automatically from a felt pad.




654321

Impression of Figures

### Models and Prices

Model No. 21—9 movements, set by an operating pawl to number consecutively, or to repeat numbers, two, three, four, five, six, ten or twelve times, or to repeat indefinitely up to one million. Price.....$20.00

Model No. 41—3 movements, to number consecutively or duplicate or repeat.
Six wheels. Price .....$15.00
Seven wheels. Price ..... 18.00
This model with special styles and sizes of figures is also made at prices varying from $20.00 to $30.00, according to size and capacity.

Model No. 81—A calendar dater. Price $8.00

In addition to the regular style of hand numbering machines, this company also builds, to special order to meet individual requirements, what are known as their "Gear Type" numbering machines, designed for the purpose of improving the appearance of textile products by printing the different style, size, case, yardage numbers and color words on tickets, labels, etc., from steel engraved wheels.

The set-up on these machines differs from all other types. Back of the handle is a radial keyboard on which is an index of all characters that are engraved on the printing wheels. Protruding through the openings in the index plate are levers, one for each wheel. On top of the levers are buttons to which are attached arrows, indicating the figures that are in

## AMERICAN—continued

printing position. The levers are geared direct to the printing wheels, so that a movement of a button, either forward or backward, changes the printing characters. Thus, the operator with palm of hand resting on the handle and fingers on the buttons, may bring any desired combination into the printing position.

Many of these models may be equipped with an extra die to print the trademark or user's name or brand in connection with the number or similar imprint.

Model No. 42, for printing the number of yards on piece tickets, labels, etc. Usually made with three wheels, two carrying figures and one, ¼ or ⅛ fractions or words.

Model No. 43, equipped for setting up of numbers the same as Model No. 42. Made with any number of wheels required for the printing of whole numbers in two groups, such as 1235-16. Designed for use in woolen and cotton mills.

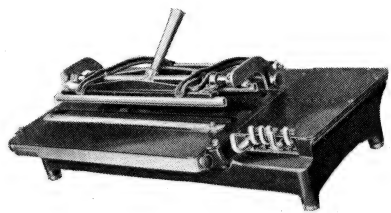
Model No. 44, is a combination of Models No. 42 and 43; equipped with whole numbers and fractions. May be equipped with any number of wheels.

Model No. 66, used principally for printing code words on labels, cloth swatches, etc. The wheels instead of having engraved characters, are equipped with slots in which may be set type to print the desired combinations of words or numbers. Made with one, two or three slots to print one, two and three lines of type directly underneath each other. The length of the slot is 2 inches. Type used is regular printers' type, specially hardened, and held in position by a thumb screw, one for each slot. With each machine is furnished a font of type of 14 letters each, of all the letters of the alphabet, together with figures, punctuations, etc.

## TICKETOGRAPH

Made by the Tabulating Machine Company. General offices, 50 Broad Street, New York City.

A coupon printing machine, designed to provide a quick and accurate means of marking piece work coupons in quantities, also for payroll compilation and production control.



The device consists of a number of bars in which type characters are mounted (in accordance with the needs of the user), representing amounts of rate schedules, order and lot numbers, size, quantity, etc. The number of bars with which each machine is equipped, is determined by the number of coupons it is desired to imprint with one operation. As many as eighty coupons can be imprinted on a single sheet simultaneously.

Before a job starts through the factory, a sheet (a printed form produced previously by a printer), divided by perforations into individual tickets (as

## TICKETOGRAPH—continued

many as there are operations on the job) is prepared in the following way by the Ticketograph:

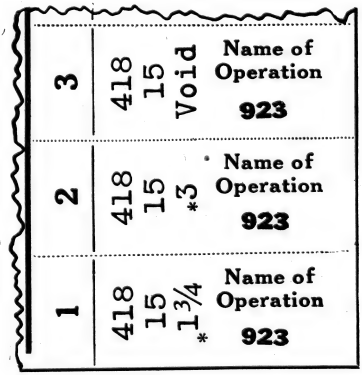
If, for instance, 20 operations are necessary in the manufacture of a lot of goods, the type bars would be set to print 20 tickets.

In the first operation, the type bars are set to print the lot number. When the handle is pulled, such number is printed on each of the coupons in the lot number position.

In the second operation, the type bars are set to print the quantity (the number of articles to be made), and in the same manner, when the handle is pulled, such number is printed on each of the coupons in the quantity position.

In the third operation, the type bars are set to print the rate schedule (the labor cost per piece or dozen, etc.). Each coupon may be printed for a different rate of pay and when certain operations are not required on a particular job, the coupons for such operations can be marked "void."

In the illustration herewith, the numbers 1, 2, and 3 at the top represent the operation numbers; 418 on each ticket represents the lot number; 15 on each ticket represents the quantity; 1¾ and 3 represent the rate of pay per piece per operation; 923 is the ticket number. Numerous variations of the numbers and their meanings are possible.




The bars are set by push rods located to the right of the printing point, the set-up showing visibly through the indicator openings before and after imprinting.

The principally emphasized advantages of the device are that the need for checking and copying coupons are eliminated because all are printed at the same time mechanically and are, therefore, correct. The type used is of special manufacture, individual in character and cannot be imitated with any measure of success.

Coupon holder books are supplied for the use of employes in filing coupons until the end of the week when they are turned in for office use. The arrangement provides for filing coupons of the same price together and enables quick and accurate computation of payroll.

Production indicator is a board, having pockets arranged in parallel rows for filing coupons representing each operation of production. Means are provided to visualize by signals when production is delayed, stopped, or when other conditions arise.

### Rental Rates

Ticketograph, rental per month per unit.....$18.50

## ROBERTS

Made by the Roberts Numbering Machine Company. General office and factory, 694-710 Jamaica Avenue, Brooklyn, New York. Sold through stationers and dealers and by their own representatives.

Automatic and manually set hand stamping machines, including models specially constructed for use in numbering piece goods, shoes and other manufactured articles.

### Models and Prices

Model No. 35—Combined numbering and dating machine, made in four, five or six wheel capacities with automatic consecutive duplicate and repeat actions, or lever movement.

Price, 4 wheels .....$37.50
Price, 5 wheels ..... 42.50
Price, 6 wheels .....$47.50
Price, Lever action instead of automatic, extra..... 5.00

Model No. 49—Automatic action numbering machine with consecutive, duplicate, triplicate and repeat movements. Also made with quadruplicate action. Price..... 7.50

Model No. 47—Automatic dating machine; date is changed by pressing a small lever. Price..... 7.50

Model No. 37—Lever set numbering machine..... 7.50

Model No. 50—Automatic numbering machine with consecutive, duplicate and repeat actions. Price..... 10.00

Model No. 48—Lever set numbering machine..... 10.00

Model No. 66—Dating machine making impressions from adjustable metal wheels. Price ..... 5.00

In addition to the above models, which comprise regular numbering machines only, the following models are also made for special purposes, each constructed to the specifications of the user:

Model No. 52 is an automatic numbering machine with die plate, equipped with automatic consecutive, duplicate and repeat action for imprinting such words as "received," "paid," etc., above the number, and to imprint a similar notation, if desired, below the number.

Model No. 60, for marking shoe linings; has a capacity of twelve wheels containing characters of letters or numerals, or to print combinations of both, with adjustable splits between number series.

Model B, is a variable numbering machine, designed for irregular numbering or where numbers jump from high to low or vice versa. The wheels are operated by individual levers one for each wheel, so that any number can be brought into printing position instantly.

Model No. 75-P, is an automatic numbering and dating machine with a die for imprinting a consecutive number and the date, from steel wheels, and from a flat die the necessary wording for certifying checks or other documents. Equipped with platform and gauges for the uniform positioning of the imprint on the check. The number changing action is automatic for consecutive, duplicate or repeat. May also be equipped with lever action instead of automatic, if desired.

Model No. 43, is a consecutive numbering machine for stamping serial numbers on metal. It may be operated in any punch, screw or lever press and is set up as any ordinary die. With each stroke of the press, the figures automatically advance consecutively.

Model No. 44, is a non-automatic numbering machine, similar to Model No. 43, except that each number wheel is set by an individual lever.

Model No. 62, automatic numbering machine for embossing metal, used for producing car seals and tags, etc. It will emboss both letters and numbers. Made with five, six or seven wheels, working automatically and consecutively. It will also duplicate if desired. Designed for operation in a power press.

## BATES

Made by Bates Manufacturing Company. Factory, Orange, New Jersey. Sales offices, 50 Church Street, New York City. Sold through stationers and office equipment dealers.

The Bates line of numbering machines has been on the market for over twenty-five years, the present models following almost exactly the original designs.

Two different types of machines comprise the line:




**Lever operated** for irregular numbering: the same number may be printed indefinitely by the operation of a lever, and advanced to the next higher number when required.

**Automatic regular movement** prints consecutive, duplicate and repeat. Also made to print the same number three, four, five or six times.

**Automatic seven movement** prints the same number consecutively, or two, three, four, six or twelve times, and repeat.

The movements on all automatic machines are set by means of a dial located on the face of the machine.

Different styles of numbers, as shown below, are available. All machines have operating parts enclosed, protected from dust and dirt.

### Models and Prices

| Number of Wheels | Regular Movement | | Lever Movement | | Seven Movement | |
|---|---|---|---|---|---|---|
| | STYLE E | STYLE A-C-G-L | STYLE E | STYLE A-C-G-L | STYLE E | STYLE A-C-G-L |
| 4 | 13.00 | 15.00 | 13.00 | 15.00 | 17.00 | 19.00 |
| 5 | 14.00 | 16.00 | 14.00 | 16.00 | 18.00 | 20.00 |
| 6 | 16.00 | 18.00 | 16.00 | 18.00 | 20.00 | 22.00 |
| 7 | 19.00 | 21.00 | 19.00 | 21.00 | 23.00 | 25.00 |
| 8 | | STYLE A-C 24.00 | | | | STYLE A-C 28.00 |

STYLE A STYLE C STYLE E STYLE L STYLE G

12345 12345 12345 12345 12345

## CLIMAX

Made by The Traut & Hine Manufacturing Company. General offices, 1 Union Square, New York City. Factory, New Britain, Connecticut. Sold through dealers.

A line of all steel, hand numbering and dating machines, self-inking.

### Models and Prices

Numbering machine, equipped with 6 wheels, automatic consecutive, duplicate and repeat movement. Price..... $ 5.00

Name plate dater, to make an imprint from a die, in addition to the number imprint. Price..... 3.50

Line dater, for date impression only. Price..... 2.50

# *Stop Tying Your Packages By Hand*

**ORDER A**

# Bunn Package Tying Machine

The BUNN will tie anything you have to tie without any adjusting and tie it tight, at the rate of from 20 to 30 packages per minute. This means Time and Money Saved

**It makes no difference what your line of business—you have packages to tie and we have a Model to suit your needs. We make a specialty of solving "Knotty Problems."**

## *Here are a few of the many users of the BUNN*

POST OFFICE and OTHER GOVERNMENT DEPARTMENTS—50 **Machines (Mail Matter)**
AMERICAN TOBACCO COMPANY, New York and Louisville—20 **(Tobacco Packages)**
NEW ENGLAND CONFECTIONERY CO., Boston—11 **(Candy)**
FORT ORANGE PAPER CO., Castleton-on-Hudson, N. Y. —7 **(Folding Boxes)**
STECHER LITHOGRAPHIC CO., Rochester—6 **(Labels)**
RAND-McNALLY & CO., Printers, Chicago—6 **(Tickets, Folders, etc.)**
KETTERLINUS LITHO. MFG. CO., Philadelphia—5 **(Labels)**
SEARS-ROEBUCK COMPANY, Philadelphia and Chicago—**(Shoe Boxes)**
RODE & BRAND, Lithographers, New York—2 **(Labels)**
WILLIAMSON CANDY CO., Chicago—**(Candy)**
M. B. HAMILTON CO., Leavenworth, Kansas—4 **(Cotton Gloves)**
POOLE BROS., Railroad Printers, Chicago—4 **(Folders)**
SWEETS COMPANY OF AMERICA, New York—2 **(Candy Boxes)**
WALTER FIELD CO., Mail Order House, Chicago—5 **(Parcel Post)**
McCORQUODALE & CO., Newton-le-Willows; England
BLADES, EAST & BLADES, Ltd., London, England
ALF. COOK, Ltd., Leeds, England
JOHN L. WHITING-J.J.ADAMS CO., Boston—5 **(Brushes)**
CHASE & SANBORN, Teas and Coffees, Chicago and Boston—3 **(Coffee, 1-lb. bags)**
OBERLY & NEWELL, Lithographers, New York—5 **(Labels and Tags)**
J. F. TAPLEY, Bookbinders, Long Island City, N. Y.—2 **(Books, Parcel Post, etc.)**
PATERSON PARCHMENT CO., Paterson, N. J.—4 **(Parchment Paper)**
HENRY HEIDE, Inc., New York—5 **(Candy)**
CARTERS INK CO., Cambridge, Mass.—**(Ink)**
NATIONAL CLOAK & SUIT CO., New York—**(Suit Boxes)**
NEWBURGH BLEACHERIES, Newburgh, N. Y.—**(Bolts of Cloth)**
ROLLINS HOSIERY MILLS, Des Moines—**(Hosiery Boxes)**

THE BUNN is a durable, reliable and efficient tying machine—easy to operate.
THE BUNN will save the time of from 3 to 6 girls.
THE BUNN will increase your package tying capacity several fold.
THE BUNN will do in a **few seconds** the work now requiring minutes.
THE BUNN will tie your various sized packages without adjustment.

***Fully guaranteed for one year*** ***Write for detailed information today***

## *The* B. H. BUNN *Company*

7329-31 Vincennes Avenue Chicago, Illinois, U. S. A.

# Package Tying Machines

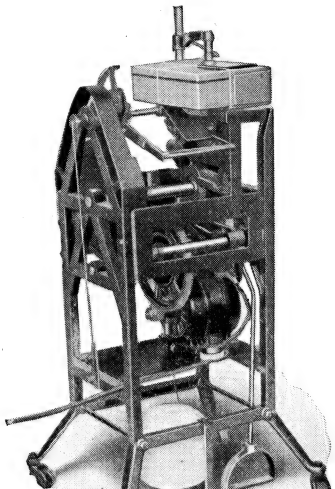
Semi-automatic machines designed to place a string around packages, boxes or bundles, apply the necessary tension, tie the knot and cut off the string automatically. Used principally in laundries, factories and similar establishments having occasion to tie quantities of boxes or parcels. The speed greatly exceeds that possible in tying by hand and through their use uniformity, security and neatness are obtained.

## BUNN

Made by B. H. Bunn Company, 7329 Vincennes Avenue, Chicago, Illinois. Sold by their own sales force.

The Bunn line of package tying machines comprises several models, motor driven and semi-automatic in their operation. They will tie any size package (according to the model, from a size measuring 1" on each dimension to a maximum of 12x9x5"), at the rate of from 20 to 30 pieces per minute. Separate types of machines are manufactured to carry the string around the package once, (single wrap) or twice, (double wrap). Both types automatically tie a double loop knot.

Turntable models make one wrap in two directions, at right angles around the package, making one knot at the completion of the second wrap.



Turntable Model

### Operation

The package or parcel to be tied is placed upon a platform at the top of the machine. If it is of a bulging nature, a compressor can be adjusted so that by a cam action, a flattening pressure is exerted on the parcel during the tying operation. The string is fed from a ball or spindle, threaded along an arm and the free end attached to the tying mechanism located under the parcel.

After the package has been placed in position, a foot lever is depressed to throw in a friction clutch, setting the machine in motion. The arm to which the string is threaded is "L" shaped and describes a revolution about the package carrying the string with it.

## BUNN—continued

For single wrap machines, the arm stops at the end of the first revolution and on double wrap machines, it makes two complete revolutions and then stops. Other mechanisms immediately function to tie a double loop knot, and cut off the string, allowing the package to be removed by the operator or automatically kicked off. The end of the string is held in the tying mechanism for the next operation.

**Turntable models** are equipped with a turntable making a one-quarter turn of the package between the first and second wraps, tying the knot at the end of the second wrap. Some models may be equipped to automatically kick off small packages after they have been tied.

The size of the package that may be wrapped is limited by the length of the wrapper arm, which in applying the string must encircle the parcel. The size of the wrapper arm is limited by the construction of the machine to a length that will not interfere as it makes its revolution. To provide an increased length, models are made with either a telescoping arm, which automatically telescopes at the bottom of its stroke, or by increasing the height of the frame, affording a greater arm radius to accommodate packages as large as 12″x9″x5″.

All models are equipped with A. C. or D. C. motors; frames are equipped with casters. The average weight is 150 lbs.

### Models and Prices

(Where dimensions of packages are given, the first dimension is the length, the second the width and the third the height.)

Small size turntable model for ice cream boxes, and similar size packages; two-way, single wrap. Accommodates packages of minmum size 6″x2″x1″, maximum size 8″x4″x4″. Price.....$600.00

Standard extension arm model, one-way, double wrap. Accommodates parcels of minimum size 1″x1″, any length, to a maximum size of 12″x5″, any length. Price..... 525.00

Medium size turntable model for candy manufacturers, packing in 5-lb. boxes for the trade; two-way, single wrap. Accommodates parcels of minimum size 7″x2″x1″ to a maximum size of 12″x9″x5″. Price ..... 600.00

Long frame, long arm model for parcel post, laundry packages, etc.; one-way double wrap. Has a long arm and extended frame to afford a greater reach to carry the string around large parcels. Accommodates parcels of a minimum size 8″x8″, any length, to a maximum size as may be required and for which models are especially designed. Price..... 700.00

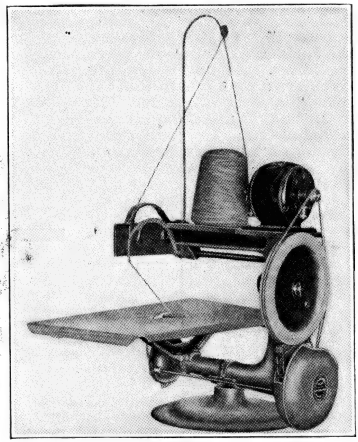
Standard medium size model for printers, carton manufacturers, mail order houses, bookbinders, etc.; one-way, double wrap. Price ..... 650.00

*Like an old and trusted friend, the DIGEST can be called upon for its unbiased experience.*

## SAXMAYER

Made by the National Bundle Tyer Company, Blissfield, Michigan. Sold through specially appointed agents.

The tying operation on this machine is automatic, resembling the principle employed on harvesting machines. The string extends from a supply ball or spindle, through an eyelet in the end of a large curved needle called a "tying bill," thence down through an opening in the platform, (on which the package to be tied is placed), to the knot tying mechanism to which the end is secured.



The package to be tied is placed on the platform and pushed forward so that the string partly encircles it. The forward movement of the package over the platform releases a recoil trip, setting the mechanism in motion, to carry the secured end of the string toward the front of the package to meet the end of the tying bill, which, simultaneously with the release of the recoil trip, swings down from its position over the package until its end engages the end of the string held in the tying mechanism. A double bow knot is then tied automatically. Packages are tied in one way on each operation. When packages are to be tied in two ways, they are sent through twice.

Speed is limited only by the speed of the operator in passing parcels over the platform. Separate tying bills are furnished to take either 4, 6, or 8-ply twine. A pressure device is furnished on the larger model to apply pressure on bulky packages during the tying operation.

All models are motor driven. When packages are not being tied, the motor drives the idler pulley on the clutch. The clutch is engaged automatically when a package is placed on the platform.

### Models and Prices

Model No. 5, ties packages up to 5 inches high, any length or width. $250.00
Model No. 9, ties packages up to 9 inches high, any length or width; equipped with pressure foot ..... 350.00

*New conditions of tomorrow in your business, will find you prepared if you study the DIGEST.*

# Paging and Calling Systems

## THE AUTOCALL

Made by the Autocall Company, Shelby, Ohio. Installations planned and complete wiring diagrams furnished by their own engineers.



**Autocall Paging Service.** The principal function is to provide a means of paging executives and certain other individuals in factories, offices, banks and similar establishments. It provides for the sounding of code signals on bells or other instruments, simultaneously throughout an entire establishment, to attract the attention of the person called. It finds the man who is away from his desk and summons him to the nearest phone for instructions as to why, where and by whom he is wanted.

The basis of the system is an electrically operated device, constructed to code automatically and send out signals representing call numbers. It is set in operation by inserting a plug in a socket corresponding to the call number of the executive desired. Thus call representing No. 21 would be sounded on all bells throughout the entire system: Two strokes, pause, one stroke, double pause and then repeated (or in code -- -, -- -, -- -). The calls are given a limited number of times or sounded indefinitely at the option of the operator.

Optional features that may be combined with the Paging Service include an Industrial Fire Alarm System and a Watchman's Supervisory Service. A complete system may comprise one combination of any or all three services.

**Autocall Fire Alarm System** utilizes the mechanism of the Autocall Paging Service and by adding any number of fire box stations situated throughout the establishment, an alarm from one of these boxes can be sounded on all signals of the Paging Service. A general alarm of fire (ten rapid strokes) is followed by a code number or signal representing the location of the box from which the alarm was sent in. Fire signals are repeated four times.

If a paging call or a watchman's report is in process when a fire alarm is sounded, it is immediately interrupted, but is continued after the fire signal has been completed.

**Autocall Watchman's Supervisory Service** also operates on the paging system. The watchman in making his rounds, registers with a key on the same boxes that contain the fire alarm stations. The call is transmitted to a locally supervised **Recording Unit,** which registers the number of the box by a code punched on a paper tape. A time stamp adds the date, hour and minute. An automatic rewind stores the recorded portion of the tape. Failure of the watchman to register at the regular time is immediately made known to the local supervisor.

## THE AUTOCALL—continued

Other optional features include the sounding of program signals, and operation from a push button placed at the main entrance to summon the watchman by ringing all bells in the establishment.

Installations vary according to the amount and kind of equipment needed (the number of signaling points, the number of plug or calling positions, etc.) to take care of actual requirements.

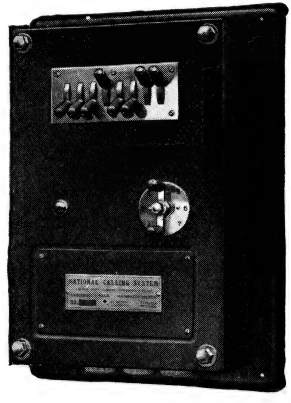
## THE TELE-CALL

Formerly made by the Tele-Call Company, 5604 Cedar Avenue, Cleveland, Ohio. Taken over in October, 1922, by The Autocall Company, Shelby, Ohio. Future equipment will all bear the Autocall label, and indications are that very little Tele-call equipment will be manufactured in the future.

## NATIONAL CALLING SYSTEM

Made by the National Scale Corporation, Chicopee Falls, Massachusetts. Sold through their own sales force.

A signaling and paging system designed to bring executives into closer touch with each other during the progress of the day's work. It enables any man to find any other man in the organization almost instantly. It permits any executive to go away from his desk knowing that he can be reached at a moment's notice wherever and whenever he chooses to go about the premises.



The system consists primarily of the Operating Instrument and Service Panel, which includes a relay that is connected by wiring to a line of signals, consisting of either bells, horns, buzzers, lights or whatever other electrical signaling devices it is desired to use. These signals are distributed throughout the establishment as required. The system has no direct connection with the telephone, but the Operating Instrument is usually located for convenience, near the telephone central station. It operates from any standard (110 or 220 volts A.C. or D.C.) lighting circuit.

The Operating Instrument is made in one universal model, which has a calling capacity of 45 different code numbers, made up and controlled from eight key-levers. There is no limit to the number of signaling devices which the instrument will control. After the levers are set for a call, a turn of the operating key starts the mechanism to sound the call simultaneously on all signals throughout the establishment, once or up to seven times as selected. The number of repeats is regulated by stopping the operating key on the turn opposite any one of the seven numbers shown on the dial. Signal can be instantly shut off by raising the first key. When in operation, a signal light flashes the code to the operator as it is sounded throughout the premises. When used with a program clock, factory timing signals can be sounded automatically for assembly and dismissal, etc.

Installation of the system can be made by any capable electrician. Diagrams and specifications furnished with each equipment.

## NATIONAL CALLING SYSTEM—continued

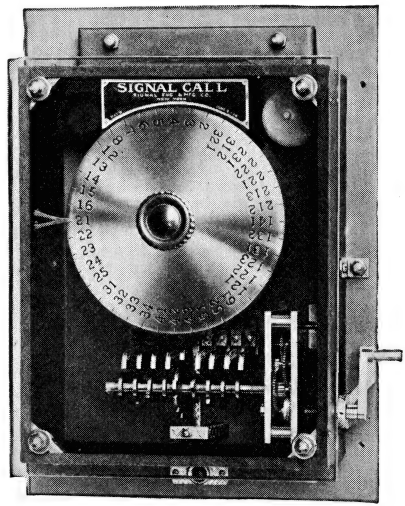
### Models and Prices

Operating Instrument with Service Panel and Relay made in one size only as above described for Alternating Current or Direct Current and for 110 or 220 Volts. Price.....$190.00

Several different types of signals are provided, including horns, bells, hummers, etc., furnished and priced according to size and the nature of the installation.

## SIGNAL CALL

Made by the Signal Engineering and Manufacturing Company, 533 Canal Street, New York City. Sold through specially appointed representatives, situated in the principal cities throughout the country.




A code sending device, connected with signals positioned throughout the establishment, to locate, instantly, men who are wanted when their whereabouts are unknown.

Each important man in the organization is assigned a code signal, corresponding to a number on the dial. When a man is wanted, the switchboard operator who has charge of the instrument, turns the dial to his number and pulls a small operating lever mounted on the right of the instrument. The signal sounds the proper code instantly in every department so that wherever the man may be, he is called to the nearest telephone to find out what is wanted. A single throw of the operating lever sounds the code once, twice or three times as desired.

The code sending device occupies less than a square foot of space. It has a range of forty code numbers and may also be connected to operate a private firm alarm system, or program signals from any kind of a master clock.

The device can be used on low voltage or on light or power current, and may be operated from low voltage transformers. It is easily installed and its operating cost is low.

### Models and Prices

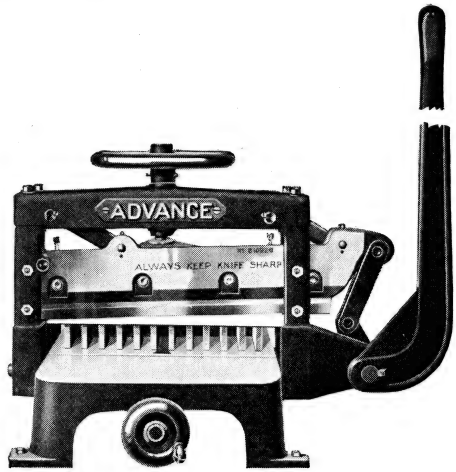
The price of a complete code system depends upon the type and number of signals required. Estimates will be furnished by the manufacturers.

# Paper Cutters

## ADVANCE PONY CUTTER

Made by The Challenge Machinery Company, Grand Haven, Michigan. Sold through specially appointed dealers.

A small lever cutter for use in offices and small print shops. The knife, operated by a hand lever, descends with a slight dip or shear motion, making the cut quickly and easily. The knife is easily removed for sharpening and is adjustable to take up wear. Accidental descent of knife is impossible, being held in the high position by a safety device released by the left hand. Clamp is operated from a hand-wheel. The back-gauge interlocks with the clamp allowing a strip ½-inch wide to be cut, and it can be run back from the cutting line to a distance equal to the width of cutting surface.




### Models and Prices

Pony, without stand, cutting width 16 inches.....$125.00
Pony, without stand, cutting width 19 inches..... 150.00

**Prices F. O. B. Grand Haven, Michigan**

Larger sizes of heavier cutters are also made by the same company.

## GOLDING

Made by the Golding Manufacturing Company. General office and factory, Franklin, Massachusetts. Sold through specially appointed dealers and agents.

Comprising a line of several models of small cutting machines for use in offices and small printing shops.

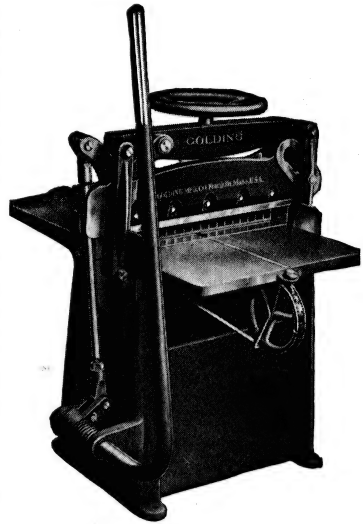
**Golding Lead and Rule Cutter:**

Designed for use of concerns using printing equipment or Multigraph outfits for cutting leads and rules. Equipped with balanced handle, large bearings, self-locking gauge for quick adjustment, to nonpareils and picas.

Prices: No. 11, gauges 80 picas ..... $18.00
No. 12, gauges 80 picas back and 69 picas front ..... $24.00

## GOLDING—continued

**Hand Lever Model:** Made in 26 and 30 inch sizes; cuts a thickness of 3 inches of stock. Designed for all ordinary paper cutting and also for manufacturers of asbestos, cloth, veneer, etc., or for cutting up samples and forming shapes of a product that may be in large sheets. The knife has a double shear or rocker action. The bed is ruled in parallel lines graduated to ½ inch. Finish, **blue-gray paint.**

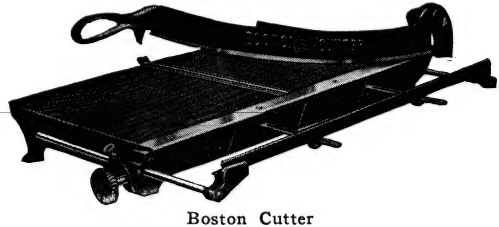



Prices: 26" size, weight 1150 lbs. .....$280.00
30" size, weight 1300 lbs.. 375.00
Extra knife for 26"..... 12.00
Extra knife for 30"..... 17.00

**Pearl Hand Lever Model:** Made in 14½ and 19-inch sizes; cuts a thickness of 2 inches of stock. Can be furnished with or without cast iron base, which also acts as a receptacle for waste. Designed for use with Multigraph outfits, by banks and commercial houses for cutting the margins from their statements, and for general cutting purposes in quantity.

Prices: Size 14½", weight 200 lbs.....$ 75.00
Size 14½", with base, weight 300 lbs..... 95.00
Size 19", weight 300 lbs..... 125.00
Size 19", with base, weight 400 lbs..... 145.00

**Boston Cutter:** Is designed for cutting stock in single sheets. Complete with adjustable front, side and back gauges. Will cut paper, cardboard, asbestos, veneer, leather, tin, etc. Cast iron and steel construction, except table, which is wood. The knife has a draw cut, making a clamp unnecessary; handle is balanced for safety and convenience.



Boston Cutter

Prices: 12" size, weight 25 lbs.....$ 20.00
16" size, weight 40 lbs..... 24.00
24" size, weight 60 lbs..... 36.00
36" size, weight 160 lbs..... 75.00
36" size, high iron stand and folding table, weight 300 lbs.. 110.00

# Permit Mailing Machines

## MAILING UNDER PERMIT

## ("Metered Mail" and "Permit Mail")

In 1920 the United States Post Office Department put into effect a regulation (Section 459 Postal Laws and Regulations), making available to the business public a new system whereby the affixing of stamps on first class mail is eliminated, and instead, envelopes are imprinted with a postmark in the mailer's own office.

The fact that such mail does not have stamps affixed avoids several time consuming operations which delay the despatch of stamped mail after it reaches the post office. Letters mailed bearing an indicia go direct to the sorters, thereby taking precedence over mail having stamps affixed, which must be faced with the stamps one way and then run through the cancelling machine, and suffer additional delay awaiting its turn for both of these operations.

The use of adhesive postage stamps has always been a source of considerable expense owing to misuse, mutilation and other causes. The cost of affixing is also a very large item, which is eliminated entirely where the permit system is employed. It also eliminates all annoyance and delay by the return of mail from which the stamps have fallen off.

### Indicia

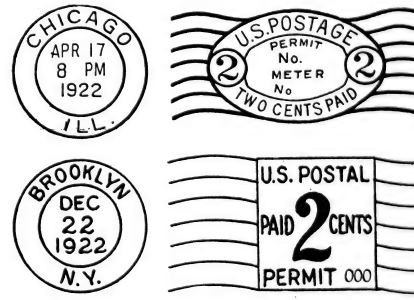
The impression of the permit upon the matter to be mailed is termed "indicia". It is a combination of postage stamp, cancellation and post mark.

Post Office regulations provide that the indicia must show:

(1) The postmark (the city, state and post office station, and the month, date and year of mailing. The time of mailing may also appear at the option of the mailer).

(2) The denomination ("one cent paid", "two cents paid", etc.).

(3) The mailer's permit number (arbitrarily assigned by the post office department). On metering types of indicia printing machines, the meter number is shown.




Above: Indicia As Imprinted By a Metering Type Machine.
Below: Indicia As Imprinted By a Non-Metering Type Machine

### Authorization

Before the adoption of this method of mailing, a license must first be secured from the Third Assistant Postmaster General, Division of Classifications, Washington, D. C., by making application through the local post master on Post Office Form No. 3612, specifying the make and type of device to be used, and submitting two envelopes on which a sample indicia has been printed.

# MAILING UNDER PERMIT—continued

## Machines

The general construction and design of all machines used for imprinting indicia is similar to the cancelling machines in general use in post offices. They operate at a high rate of speed, and nearly all are equipped to seal the envelopes at the same time they are run through for imprinting of the indicia.

They are of two distinct classes:
(1) Metering type,
(2) Non-metering type.

## Metering Type

The basis of this system is a meter in which is set the printing die and recording mechanism. The entire unit is removable from the imprinting machine so that it may be taken to the post office where it is set and locked by the postmaster for a definite number of impressions according to the amount desired by the user.

Such meters have two counting registers. The upper register indicates the total amount of postage used, accumulating to one million, whereupon it automatically resets to zero. The lower register indicates the stamp impressions paid for and unused. It has a capacity of 100,000 imprints, which may be purchased in any quantity and paid for when the meter is set. The door of the meter is locked and sealed at the post office after each setting. Each imprint decreases the lower register and increases the upper register.

When the lower register entirely discharges, the printing head automatically locks and will not function until the meter is taken to the post office and set for additional postage. It is unnecessary to discharge the meter completely before having it reset.

Separate meters are required for different denominations of postage. Each meter prints impressions corresponding to the denomination and color of the adhesive stamp it substitutes. Several meters may be secured for the one imprinting machine. The dies are quickly and easily interchangeable when different kinds of mail are to be run through.

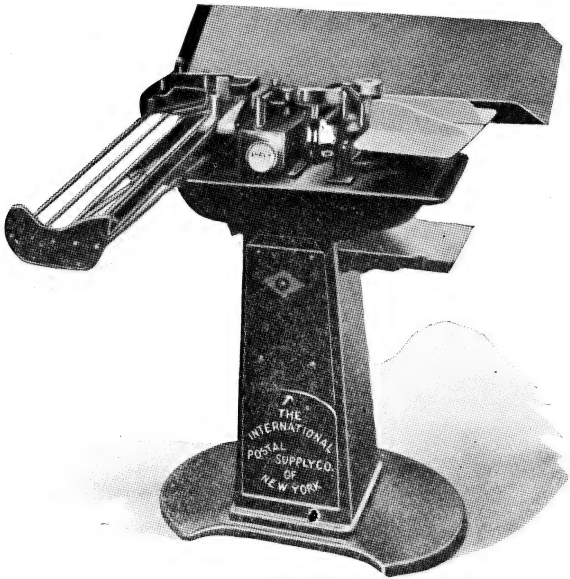
All metering devices and the indicia for imprinting must be approved by the post office department. While each impression made is deducted on the counter from the amount of impressions purchased, a credit is allowed by the post office for any impressions made but not used, (that have not been sent through the mails) such as soiled envelopes and those withdrawn before mailing. Postage is paid only on letters actually delivered to the post office.

## Non-Metering Type

Non-metering types print the indicia and count the number of pieces. When mail so imprinted is delivered to the post office, it must be accompanied by a statement of mailing (Post Office Form 3602), showing the number of pieces, class of meter, and the amount of postage to be paid. The mailer has the option of either making a deposit against future mailings or of paying postage at the time of mailing. The postal clerks then check the mail to verify the count and later issue a receipt covering the amount paid. It is not necessary for the mailer to wait while the mail is being checked as the statement and amount paid is accepted as accurate until proven as otherwise.

## HEY-DOLPHIN POSTAL PERMIT MACHINE
### (Non-metering type)

Made by the International Postal Supply Company, 634 Prospect Place, Brooklyn, New York. Sold through their own specially appointed sales force.




Model F

This machine is a modification of the Hey-Dolphin Cancelling machine used in post offices. It imprints the indicia and counts the number of pieces of mail. It is of the non-metering type.

The machine takes any standard size envelope any thickness up to ⅜ of an inch and is not affected by paper clips, etc. Equipped with five-unit resetting counter. The machine feeds, counts and stacks automatically and the design of the inking device is such that an even flow of ink is constantly maintained. The printing dies are of hardened steel and are instantly interchangeable.

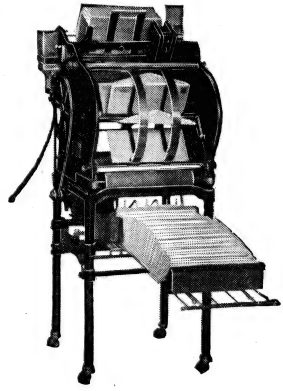
### Models and Prices

Model F, motor operated, ¼ H.P.; speed, 800 impressions per minute, occupies floor space of 42 x 42 inches.....$800.00

Model M, motor operated, 1/6 H.P.; speed, 400 impressions per minute, occupies floor space of 36 x 36 inches. Also convertible to hand power..... 475.00

## LIGHTNING
### (Non-metering type)

Made by the Bircher Company, Incorporated, Rochester, New York. Sold by their own sales force.



An electrically operated device of the non-metering type. This machine may be instantly changed to either imprint indicia on permit mail, or affix postage stamps. It stamps or imprints, and seals and counts in one operation. The interchangeability of the stamping feature is intended to provide for sending out certain classes of first class mail under the government permit, imprinted with permit indicia, or stamping, with the regulation adhesive postage stamp, mail such as advertising, etc., on which indicia is not desired.

Rotary principle of operation, equipped with automatic feed; letters are ejected in the same way in which they enter the machine. Affixes stamps and seals at a rate of 6000 per hour. Handles envelopes up to ⅜ of an inch thick without adjustments. Affixes stamps in any position desired.

### Models and Prices

Standard Model Printer with stamper attachment.....$750.00
Standard Model Printer with permit attachment..... 850.00
Standard Model Printer with both stamper head and permit attachment ..... 940.00

## MAIL-O-METER PERMIT PRINTER
### (Non-metering Type)

Made by the Mail-O-Meter Company. General offices and factory, 3455 East Jefferson Avenue, Detroit, Michigan. Sold by their own sales force through branch offices located in principal cities.

A non-metering type of permit mailer, built on the same general principles as the Model M Mail-O-Meter, for sealing and affixing stamps to envelopes. Equipped with a hand-cut steel die showing the amount of postage paid, the date, city of mailing and permit number.

It is provided with two positive counters, or registers. One is equipped with a Yale lock and may be cleared at any time by a key, to provide records of each separate mailing run through the machine. The second, or larger register, cannot be cleared except automatically when it clears after registering 9,999,999 pieces of mail. It shows at all times the accumulation of all mail records taken from the smaller counter.

Envelopes are sealed at the same time that the indicia is imprinted, at a speed of 250 per minute. All standard size envelopes may be handled.

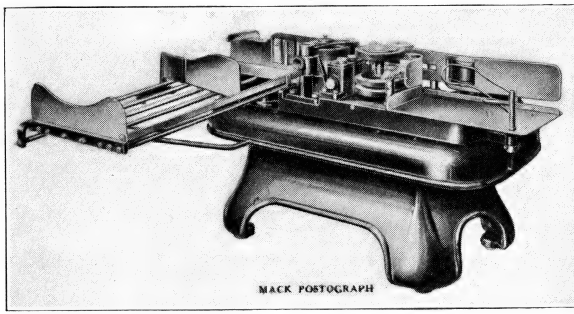
### Models and Prices

Model D—Electrically operated (including die) .....$685.00

## MACK

### (Metering type)

Made by the Mack Postograph Company, 632 Homer Laughlin Building, Los Angeles, California.




A metering type of permit printer which will soon be put on the market. The device will be sold outright at a price approximately $750.00; the printing heads will be leased at $100.00 per year each.

The machine is designed for imprinting, counting and stacking ordinary size envelopes at a rate of 300 per minute. The meter in which is contained the printing head, is a recording device with a capacity of one million impressions. This device is detachable and is brought to the post office by the user for the purchase of a number of impressions of each denomination, corresponding to the purchase of postage stamps of like denomination. Separate meters are required for each different denomination. When the number of impressions has been used, the entire machine locks until additional impressions have been purchased.

## MAIL-O-METER PERMIT MAILER

### (Metering Type)

Made by the Mail-O-Meter Company, General offices and factory, 3455 East Jefferson Avenue, Detroit, Michigan. Sold by their own sales force through branch offices located in principal cities.

A metering type of permit mailer, designed to imprint the indicia, and seal and count envelopes, at the rate of three hundred per minute. It will feed any standard envelope up to 8" x 12", right side up. All operations are automatic, including the envelope feed.

The meter, a separate detachable unit, contains the steel printing head, and is equipped with an accumulative register, having a capacity of eight places to record the number of impressions made in any period or batch run, and a descending register, having a capacity of six places, which is set by the postoffice authorities for the number of imprints desired. Sep-

## MAIL-O-METER PERMIT MAILER—Continued

arate meters are required for each different denomination of postage. Each meter prints impressions corresponding to the denomination of the adhesive stamp it substitutes. Any number of meters may be secured for one machine. When the number of impressions for which any meter has been set are used, the entire meter locks until additional impressions have been purchased.

### Models and Prices

Model M—Mailing machine, electrically operated, complete with stand (but without meter) .....$975.00

Meters are rented. Rates per meter: Six cents per thousand impressions; minimum charge $4.00 per month; maximum charge $7.50 per month.

## PITNEY-BOWES POSTAGE METER
### (Metering Type)

Made by the Postage Meter Company, Stamford, Connecticut. Distributed by their own sales force throughout the country.

The system comprises two separate units:

(1) The meter, which is never sold outright, but is rented on a lease basis;

(2) The mailing machine for operating the meters, which is either leased on an annual contract basis or sold outright.

The meters cannot be used without the mailing machine to operate them.

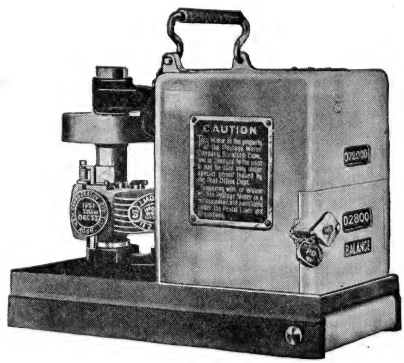
The system provides for the purchase from the post office in advance, by settings of the meter, any quantity of any denomination of impressions, corresponding to the purchase of like quantities and denominations of adhesive postage stamps. It has been in operation since the inauguration of this plan of mailing, and has been officially recognized and authorized by the post office department.

### The Meter

The meter is a small printing and recording mechanism in a bronze housing, detachable from the machine, which operates it, so that it may be taken to the post office for setting.

It has two registers, both visible through small glass windows. The upper register indicates the total amount of postage used, accumulating to one million, when it automatically resets to zero.

The lower register indicates the stamp impressions paid for and unused. It has a capacity of 100,000 impressions ($2,000 in 2c impressions), which may be purchased in any quantity desired, and paid for when the meter is set. The door of meter is locked and sealed at the post office




**The Meter**

## PITNEY-BOWES POSTAGE METER—continued

after each setting. Each imprint decreases the lower register and increases the upper register.

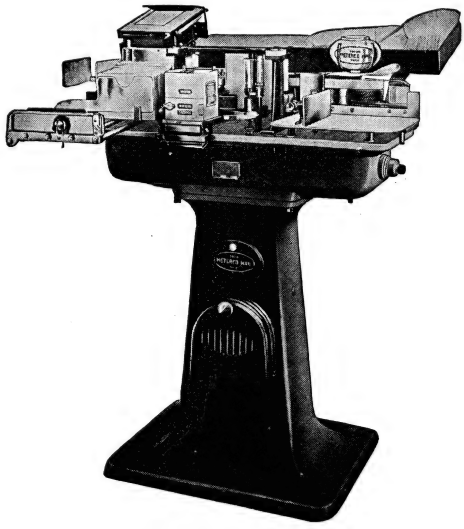
When the lower register entirely discharges, the printing head automatically locks and will not function until the meter is taken to the post office and reset for additional postage. It is unnecessary to completely discharge the meter before having it reset.

Separate meters are required for different denominations of postage. Each meter prints impressions corresponding to the denomination and color of the adhesive stamp it substitutes. Any number of meters may be secured for one machine.

The printing die is engraved on hardened steel. It prints the user's post office license number and the registered number of the meter as well as postmark, and date and hour of mailing. The die is inseparably attached to the meter, and will not revolve unless the meter is in proper position on the machine.

It is mechanically impossible to waste metered postage, as the register will not record unless an imprint is made on a piece of mail. Unmailed matter, bearing the imprint, is redeemable.

A set of interchangeable steel type for the date and hour of mailing is furnished with each meter. A small carrying case is provided with the meter. The meter is 6x5x8 inches.



**The Mailing Machine**

### The Mailing Machine

In general construction and design, the mailing machine is a modification of the "Universal" Postmarking and Canceling machine, manufactured by the same company.

It operates at a rate of 250 pieces of mail per minute, and has an envelope sealing attachment. It will seal and imprint all commercial sizes of envelopes simultaneously or separately, as desired. Envelopes as large as 12x14 inches in size and ⅜ of an inch in thickness can be printed on this machine without making adjustments. Special machines and attachments are furnished for unusual requirements.

## PITNEY-BOWES POSTAGE METER—continued

Envelopes for use with this machine must be made with the flap at the bottom to be sealed at the same time they are imprinted. Envelopes with the flap at the top may be imprinted or sealed, but not both, in a single run through the machine. This requirement arises because the construction of the machine is the same as that of the post office cancelling machine, which feeds envelopes with the stamp corner at the bottom. The position of the flap on envelopes so fed, is such that sealing is not practicable. Therefore, the majority of users have envelopes made with the flap at the bottom.

The feeding and separating are done automatically. After passing the sealing and printing mechanism, the mail is accumulated in a stacker on which is provided an arrangement for quickly tying it into bundles for despatch to the post office. Special attachments may be secured with the machine, where required, for counting envelopes, cards, etc. Attachments for receipting and dating postcard statements, etc., are obtainable also.

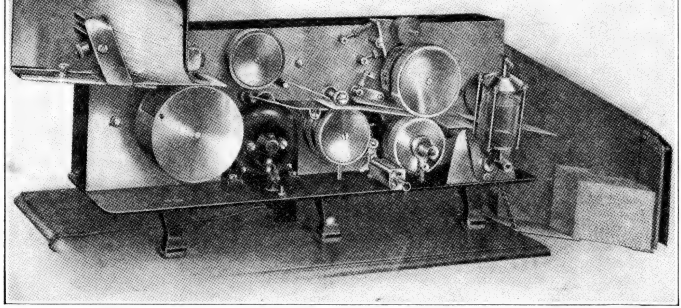
The entire machine is mounted on a base and occupies a floor space of 38 x 42 inches. It is driven by a small electric motor concealed in the base, with a convenient controlling switch.

### Prices

Meters: Rental per month, each.....$ 10.00
Mailing Machines: Model A, rental per year..... 125.00
Outright sale price $1350.00

## STANDARD POSTAL PERMIT PRINTER & SEALER
### (Non-metering type)

Made by the Standard Envelope Sealer Manufacturing Company, Everett, Massachusetts. Sold through their own specially appointed dealers and agents in all principal cities.



An electrically operated mailing machine of the non-metering type, to automatically feed, count, moisten, stack and seal envelopes at the rate

## STANDARD POSTAL PERMIT PRINTER AND SEALER
### Continued

of 12,000 per hour, at the same time, imprinting on each envelope the permit indicia. Any ordinary size commercial envelope can be handled.

The device is portable and entirely automatic. A feed hopper holds the supply of envelopes, from which they are fed from the bottom and carried forward against a trip-lever, where the envelope is momentarily held until the printing die is in printing position. The envelope is then released to be imprinted and at the same time is counted on the register, which is actuated only by contact with envelopes passing through the machine. The register counts only envelopes which are being imprinted and no envelope can be imprinted without being counted.

The counter is of the set-back ball bearing type, equipped with lock and key. Before each mailing, the counter may be set back to zero and locked against resetting. When the mailing is completed, the count shown on the register if multiplied by the denomination, gives the amount of postage to be paid.

After the envelopes have been imprinted and counted, their feed is automatically continued to the moistener, which moistens the gummed portion of the flap, and as the envelope is delivered to the stacking hopper, two rollers cause sufficient pressure to seal it.

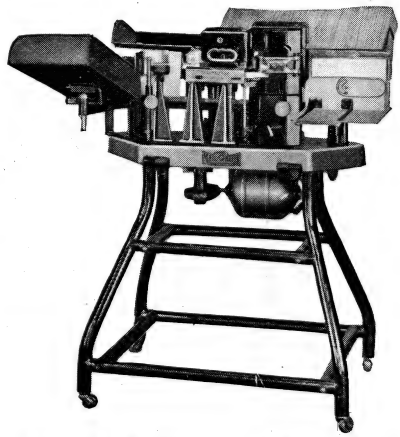
All operative parts are exposed and accessible; every operation is visible throughout.

By removing the date stamp, the device may also be used for imprinting second and third class matter, and may also be adjusted to imprint without sealing, or seal without imprinting, or be used for counting only. The printing dies are cut from hardened steel, hand engraved. The date, month and year type, as well as that denoting the denomination of postage paid, are instantly removable or replaceable.

### Models and Prices

Standard Model, motor operated, without die.$600.00

Printing dies, consisting of die bearing the required indicia and permit number and interchangeable type blocks for 1c, 2c and 4c paid, 31 dates, 12 months and 10 years 50.00



Mail-O-Meter Metering Type of Permit Mailer Described on Page 319

# Perforating Machines

Perforating machines, as covered by this section, are either hand or electrically operated punching machines, designed for use in banks, business houses and commercial institutions to perforate designs in checks, invoices, etc., to denote the date, place and fact of payment. A few of the uses are:

Cancelling checks, notes, drafts, bonds, revenue stamps, etc.
Dating and numbering orders, factory and shop work tickets, etc.
Receipting bills, invoices, delivery tickets, etc.
Validating passes, coupons, etc.




(Reduced sizes)
Fac simile Perforations

Numbering sales tickets showing departments, etc.
Auditing purposes, indicating that bills have been entered, audited, paid, etc.
Protecting postage stamps, premium coupons, etc.
Dating labels, showing date food products were made, packed, shipped, etc.

The different makers supply stock dies for straight dating or numbering purposes, but any special design, within certain limitations, may be obtained.

## AMERICAN

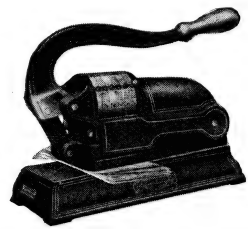
Made by the American Perforator Company, 624 West Jackson Blvd., Chicago, Illinois.



Foot Operated
Model No. 54



Electrically
Operated
Model No. 70






Hand Operated Model and Facsimile of Perforation (reduced size)

The general design of all models is similar. They are constructed as a complete unit, consisting of a pedestal base on which is mounted a punch head equipped with a series of changeable perforating character dies in

## AMERICAN—Continued

cylindrical formation, provided with levers for changing the set-up. They are equipped to operate with foot pedal or electric motor. Electrically operated machines have automatic self-actuating clutch, the insertion of papers automatically throwing the machine into punching action. The timing of the stroke is adjustable.

A cipher code system, called the "Cryptographic System", is a patented feature. It provides a combination of twelve perforations making code characters representing month, date and year, stock or production numbers, etc. The system has been designed for the use of manufacturers who do not want the date of production to appear in plain characters on the labels of food products, etc.

### Models and Prices

Model No. 54, foot operated dating canceller. Equipped with stock die having word "PAID". Over-all height 36 inches; floor space 19 x 36 inches; weight 180 pounds. Price, including complete duplicate set of interchangeable cutting dies for emergency replacement.....$200.00

Model No. 71-90, automatic, electrically operated cancelling perforator. Direct drive equipped with safety switch. Takes 25 checks at one time; speed 1000 per minute. Equipped with stock die having word "PAID" and having changeable dates for month, date and year, or the word "PAID", changeable dies for month, date and year and a special die showing bank's A.B.A. transit number. Height over-all 60 inches; floor space 24 x 19 inches; weight 510 pounds. Price, including duplicate set of interchangeable cutting dies for emergency replacement .....$600.00

Model No. 70, automatic, electrically operated label marking and check cancelling perforator. Direct drive, equipped with safety switch. Can be had with dies to perforate either cipher-date or plain figures. Height over-all 56 inches; floor space 15x15 inches; weight 275 pounds. Price, including duplicate set of interchangeable cutting dies for emergency replacement .....$300.00

Model No. 30, foot power label marking perforator. Height over-all 41 inches; floor space 11x15; weight 90 pounds. Price, including duplicate set of interchangeable cutting dies for emergency replacement.$175.00

Other models in hand lever types are priced from $30.00 upwards.

*All religion thrives by conversions. Tell us what the DIGEST has done for you, what problems it has solved, what new ideas it has created, what it has saved you in specific instances.*

## CUMMINS

Made and sold by the Cummins Perforator Company (formerly the B. F. Cummins Company), 4740 Ravenswood Avenue, Chicago, Illinois.



The construction embodies a series of changeable perforated character dies mounted in cylindrical formation; set in a heavy metal punch press. Levers are provided for setting the dies in the proper positions for representing the month, day and year. The arrangement provides a perpetual dater.

Made in hand and motor operated models. The hand operated models will perforate up to 10 checks at a time, while the motor operated models can accommodate as many as 25 at a time. The speed of individual operation of the machine is dependent only on the skill of the operator.

Electrically operated models are equipped with an extra die and set of punches in one complete unit for emergency replacement.

### Models, Specifications and Prices

Model No. 12, portable, hand operated, perforates the word "PAID" and the date expressed in numerals. Dimensions: Base 12 x 5 inches, height 9 inches, handle 15 inches. Weight net 29 pounds. Price.....$67.50

Model No. 20, portable, hand operated, same as above with special die showing the bank's A.B.A. number. Weight net 50 pounds. Price..$137.50

Model No. 75, **Motor Operated Check Canceller.** Controlled by foot operated clutch; makes 3-line perforations; mounted on pedestal base; all metal construction (except work table), dimensions; base 19 x 20 inches. height over-all, 53½ inches. Weight net 518 pounds. Price, including duplicate interchangeable punch and die block.....$475.00

Model No. 76, **Motor Operated Dating Perforator.** (Formerly Model No. 70.) Controlled by foot operated clutch; mounted on pedestal base; all metal construction (except work table). Designed for high speed quantity production. Dimensions: Base 24 x 19 inches, height over-all, 59½ inches. Weight, net 700 pounds. Price, including duplicate interchangeable punch and die block .....$675.00

All prices F.O.B. Chicago, Illinois.

# Photo-copying Apparatus

Photo-Copying machines, unknown ten years ago, are today in daily use the world over. They are used to produce quickly and accurately, inexpensive copies of records, maps, drawings, blue prints, account sheets and documents of every kind, as well as pictures of machine parts, fabrics and various small objects. Their use is not confined to the larger institutions, such as insurance companies, which have for years been large users of this equipment, but the convenience and wide variety of uses indicate their value in so many ways and for so many purposes, that smaller concerns will probably find in them a means of reducing costs in many kinds of copying.

The absolute accuracy of photo-copying makes this method, on some work, superior to any other, not only because it is faster and cheaper, but because it also eliminates the possibilities of human errors. Details and proportions in the original are preserved in the print, the copy is clear and sharp, and no checking back is necessary. Prints made by such machines are accepted as legal evidence in court because they are fac-similies of the originals. Their ability to reproduce any subject in an enlarged size, offers many possibilities not available by other forms of copying. Signatures on wills or other documents, samples of hand-written or type matter may be enlarged perfectly and faithfully to almost any scale.

An instance of their use would be, say, the copying of an involved price list or other tabular form, which had to be reproduced quickly and with absolute accuracy. A photo-copying machine will reproduce in less than one minute what it would take a typist eight hours to do and the need for proof-reading would be entirely eliminated. One of the outstanding uses of this equipment is the recording of mortgages, deeds, wills, etc., in government, state and county departments. Instances are on record, where three copying machines are doing work formerly requiring 200 typists, and with a phenomenal increase in speed.

The prints are permanent and can be depended upon to preserve records indefinitely. Tests made by the manufacturers and disinterested laboratories show a permanency equal to typewriting.

## Principles of Operation

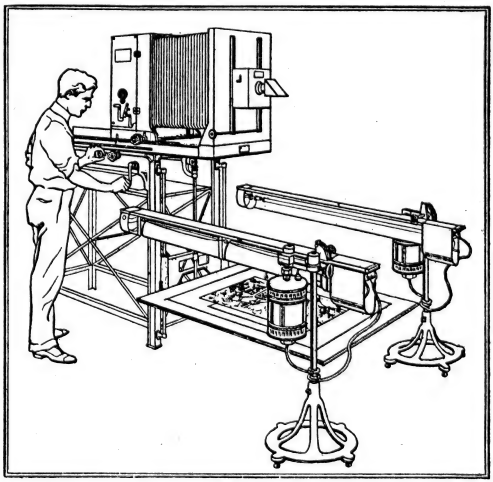
The photo-copying machine is a combination of a large camera and developing machine, photographing direct on sensitized paper. The assembly is mounted upon a stand, to the front legs of which is attached a movable subject holder. Devices are provided for mechanically focusing the machine to any desired size of copy. The entire apparatus is so simplified that any ordinary office boy or girl can operate it efficiently. No previous knowledge of photography is necessary. Perfect copies are produced with speed, accuracy and convenience.

The prints are made direct on the sensitized paper in correct position, no negative, plate or film intervening in the process, which greatly reduces the cost and eliminates the time and care required in handling. The first print taken from the original is a "black" print, or in other words, the color shades are reversed; the whites in the original are black and the blacks, white. A white "positive" print of the original is made by re-photographing the black print. As many black prints as desired may be made by continuing to photograph the original or as many positives as required may be made by continuing to photograph the black print. Almost any color or combination of colors, may be photographed readily, results appearing in grays and blacks according to the relative depths of the original colors. This is specially helpful in copying such subjects as purple typewriting, colored ink, stamp markings, blue prints, etc.

## PHOTO-COPYING APPARATUS—continued

The subject to be copied is placed in the subject holder, a flat cabinet having a glass lid, which serves to hold the copy flat during exposure. Book holders are also provided by the different makers for copying pages in bound books, etc.

Horizontal and vertical scales, accurately determine the correct focus without requiring any skill or concentration on the part of the operator. When once set, as many exposures of similar nature as may be required, may be made without re-focusing. If desired, however, a ground glass screen may be used. A high grade Anastigmat lens, equipped with an adjustable diaphragm, is regularly supplied with all machines. A color screen is provided for use when the subject to be copied is in color, such as blue, purple, yellow or other combinations of colors. The screen is thrown on or off by moving a handle near the shutter control.



A Typical Photostat Copying Machine, Showing Lighting Units

The sensitized paper is furnished in rolls containing 350 feet, and may be loaded into the machine in daylight. A portion of the paper is drawn into exposing position, within the exposure chamber, by a small crank on the side of the machine. A register shows the exact amount of paper that is unwound for each exposure.

The time of exposure varies according to the light. Vapor lights, as described below are preferable to natural light. With such artificial lighting equipment, the usual exposure (varying according to the emulsion on each roll of paper) is ten seconds. When the correct time of exposure has been established the timing of subsequent exposures can be uniform.

## PHOTO-COPYING APPARATUS—continued

After the exposure has been made the paper is cut off and carried underneath the exposure chamber to the developing bath, where it remains for a time, usually averaging 35 seconds, and is then drawn into a fixing bath where it is allowed to remain the required time to fix the print permanently.

All the above operations are controlled from dials and levers located on the right side of the machine. While one print is being developed or fixed, another exposure can be made. Adjustments provide for exposing any length of paper so that if but a small print is desired, only sufficient paper to accommodate it need be exposed. When the copies are removed from the fixing bath, they are allowed to dry by exposure to the air, or may be run through a drying machine, hereinafter described.

Ordinarily, the subject holder is located in front of and below the lens. For large subjects such as maps or large drawings, the prism may be turned at right angles to its normal position so that it points toward a wall to which the subject may be hung.

In large installations, or where the maximum of speed is desired, instead of taking the time to develop the prints within the machine, they are deposited as exposed, in a light-tight box, and are later developed and fixed in a dark room, or, a conveyor may be used in place of the light box. The machine being set, backed up to a dark room, the prints are fed directly and automaticaly into the conveyor which carries them into the dark room.

Some makes are equipped to handle paper having emulsion on both sides and will photograph on both sides of the paper simultaneously. This is accomplished by an arrangement of mirrors, within the camera. The requirement of copying on the front and back of the same sheet arises through the need of conserving space in record rooms, such as in court houses and other places where documents are recorded. The loose sheets are later bound into books.

## RECTIGRAPH

Made by the Rectigraph Company, Rochester, New York. Sold by their own representatives through branch offices located in principal cities.

This device is similar in practically all respects, to the general description above given. It is entirely automatic in all of its operations, and is designed to require a minimum of floor space. The automatic operation eliminates the disagreeable feature of handling prints through the solution with the hands. Prints are handled entirely within the machine, requiring only their being lifted out of the fixing bath when the fixing is completed.

In its travel in the machine, the paper comes through all operations face up, thus, eliminating the chance of any part of the mechanism touching or marring the sensitive surface.

Equipped with Anstigmat lens and color screen. The construction is of wood and metal; the design provides for easy accessibility of the working parts, and for cleaning. The copy holder measures 28″x28″ and will accommodate any kind of subject, flat or in book form, within its size.

### Models and Prices

| Maximum Print Size | Cost of Materials Per Print | Overall Dimensions Height | Width | Length | Price |
|---|---|---|---|---|---|
| 11½″x14″ | 5 cents | 66″ | 26″ | 71″ | $500.00 |
| 12″ x16″ | 7½ cents | 67½″ | 26″ | 71″ | 600.00 |
| 18″ x24″ | 13½ cents | 78½″ | 28″ | 84″ | 850.00 |

## CAMERAGRAPH

Made by the Cameragraph Company, Kansas City, Missouri. Sold by their own representatives through branch offices located in principal cities.

This company manufactures two different types of photo-copying machines. The Simplex machine copies on one side of the sensitized paper, only. The Duplex machine copies on both sides of the sensitized paper simultaneously, or if desired, one side only, or both sides, one at a time.

The construction is all metal. It is equipped with the various controls previously described generally, for such machines, and is made in several models varying in the size of the print produced.

## PHOTOSTAT

Made by the Photostat Corporation, Rochester, New York. Sold by their own representatives through branch offices located in principal cities.

This device follows the general description above given. The entire construction is of metal; equipped with Anastigmat lens; color screen, developing and fixing trays and a mechanical focusing arrangement.

Subject holders are made in two styles: The book holder has a glass cover and is used for holding books, valuable papers, etc.; the large engineering board is used to hold drawings, blue prints, etc. Both holders are interchangeable and easily attached to the stand. Prints are delivered automatically into the developing bath and then transferred, face downward, into the fixing bath.

### Models and Prices

| Model | Maximum Print Size | Cost of Materials Per Print | Floor Space | Price With Engineering Board | Price With Bookholder | Price With Engineering Board & Bookholder |
|---|---|---|---|---|---|---|
| No. 1 | 11½"x14" | 6 cents | 4x 8′ | $ 650.00 | $ 675.00 | $ 700.00 |
| No. 2 | 14" x18" | 9 cents | 5x10′ | 800.00 | 825.00 | 850.00 |
| No. 3 | 18" x22" | 12 cents | 6x12′ | 1,000.00 | 1,025.00 | 1,050.00 |

## PHOTO-COPYING AUXILIARY EQUIPMENT

In order to produce satisfactory reproductions in the shortest time and with the least liability of failure, it is necessary that the light be of constant intensity and of high photographic power. Daylight has such wide fluctuations, the variations in photographic power being far greater than the difference in visual intensity, that it cannot be depended upon for the purpose. Therefore, it is usually desirable to make exposures with artificial lighting. The following equipment has been adopted as standard by all makers.

## COOPER HEWITT LAMP

Made by the Cooper Hewitt Electric Company. General offices, 95 River Street, Hoboken, New Jersey.

The Cooper Hewitt lamp used with photo copying machines, gives out its light from a glass tube 4 feet long and one inch in diameter, which during operation, is filled with luminescent vapor which is very rich in the photo-actinic rays and is perfectly steady. The tube is equipped with a white-enameled reflector so that practically all of the light is directed

## COOPER HEWITT LAMP—continued

upon the originals to be copied, thus insuring uniform illumination. The lamp is entirely self-contained and automatic in operation; produces very little heat; requires no special attention, and is economical in cost of electric current.

A special outfit is made for use with photo-copying machines, consisting of the regular Cooper Hewitt tube and reflector mounted on a movable stand to which is attached the necessary electrical accessories. Provision is made for adjusting the height of the tube to any required position over the table and also for swinging it into a vertical position, if desired. Two outfits are generally used, one on each side of the subject holder, which enables shorter exposures to be made, especially when the originals are large. When used with a copying machine, the lamps are usually placed, and the reflectors turned, so as to throw the light sidewise and downward over the subject.

### Models and Prices

Outfit No. 47, for direct current, 100 to 125 volts, single lamp .....$ 75.00
Outfit No. 47, Pair of lamps, right and left mountings ..... 150.00
Outfit No. 46, for alternating current, 100 to 120 volts, 60 cycles, or 200 to 240 volts, 60 cycles, single lamp ..... 90.00
Pair of lamps, right and left mountings ..... 180.00
Universal Outfit, with special auxiliary adjustable so as to operate on alternating current, 100 to 120 volts, 60 cycles, or 110 volts direct current, single lamp ..... 92.00
Pair of lamps, right and left mountings ..... 184.00

Note: Electric current consumed on direct current, single lamps is 385 watts; on alternating current, 400 watts. The cost per hour to operate either type (at 10c per KW rate) is 4 cents.

## PA-KO PHOTO DRYER

Made by the Pa-Ko Corporation, Minneapolis, Minnesota.
A gas or electrically heated rotary dryer, driven by a 1/20 HP motor, for the quick drying of prints made on photo-copying machines.

The prints are laid on a canvas apron traveling through the machine. A three-speed attachment permits control of the apron speed so that any print may be dried in one trip through the machine. Adjustments provide for regulation of the heat. Each outfit is equipped with a pyrometer, to enable the operator to ascertain the heat required for each class of work, and to duplicate any heat condition.

### Models and Prices

Gas heated, F. O. B. Minneapolis .....$160.00
Electrically heated, F. O. B. Minneapolis ..... 225.00

*The publishers invite readers to submit their special problems. All questions answered gladly and without charge.*

# Scales

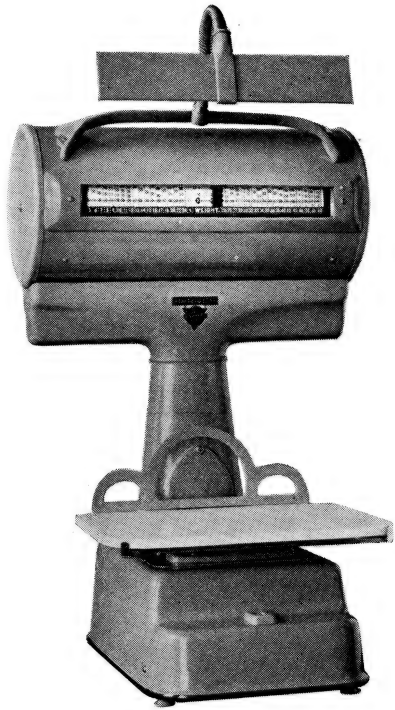
## COMPUTING TYPES FOR RETAIL STORES AND PARCEL POST

### BARNES

Made by the Barnes Scale Company, 6521-23 John R. Street, Detroit, Michigan. Sold through dealers.

A cylinder type of computing scale for use in retail stores. Full agate bearing construction; the design requiring no counter balance. A dashpot eliminates the vibration of the indicator and quickens the weighing operation by bringing the indicator to rest quickly. Weight indication and computed price visible to clerk; weight indication only visible to customer. Working parts entirely enclosed.

Regular finish: gold; special finishes: gray or white. Choice of two charts: 5 cents to 60 cents, or 10 cents to 75 cents.



#### Models and Prices

Model No. 10, 24 pounds capacity. without reflector ..... $170.00

Model No. 10, 24 pounds capacity, with reflector ..... 175.00

Model No. 10, 24 pounds capacity, with electric light actuated by the weighing operation... 200.00

Model No. 10, 24 pounds capacity, with electric light as above and base wired ..... 205.00

### STIMPSON

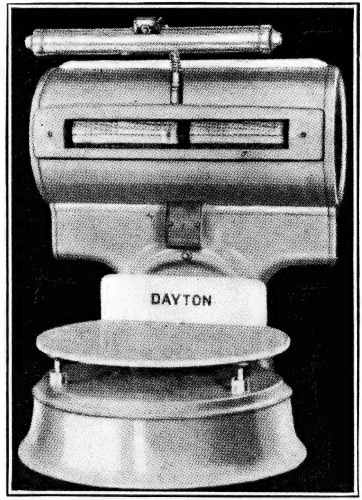
Formerly made and sold by Fairbanks-Morse & Company, 900 South Wabash Avenue, Chicago, Illinois.

Production and sale by the above company has been discontinued.

# DAYTON

Made by the Dayton Scale Company, Dayton, Ohio. Sold by their own sales force through agencies located in principal cities throughout the country.

The Dayton line of computing scales comprises a wide range of models and capacities suited for different lines of business. The company has been engaged in the manufacture of computing scales continuously for more than thirty years




## General Specifications

All models, unless otherwise noted, have jeweled agate and ball bearings; a quick stopping device for automatically bringing the computing chart to rest to permit of reading; automatic thermostat compensator; weight indication and automatically computed price, visible to the clerk; weight indication visible to the customer; choice of charts for various capacities. All models excepting those equipped with a tare beam, compute to full capacity.

Flasholite device is an electric equipment for illuminating the chart; controlled automatically by weighing operation. Wired for standard 110 or 220-volt current.

## Models, Prices and Specifications

### Drum Type

| Model | Price | Flasholite | Finish | Specifications |
|---|---|---|---|---|
| No. 556 | $350.00 | With | Porcelain | 20, 24, 30 lbs. Low construction, enclosed design. |
| No. 554 | 310.00 | Without | Porcelain | 20, 24, 30 lbs. Same as No. 556 but without Flasholite. |
| No. 546 | 350.00 | With | Porcelain | 15, 20, 24, 30 lbs. High construction, enclosed design. |
| No. 544 | 310.00 | Without | Porcelain | 15, 20, 24, 30 lbs. Same as No. 546 but without Flasholite. |
| No. 356 | 285.00 | With | Gold | 20, 24, 30 lbs. Low construction, enclosed design. |
| No. 354 | 255.00 | Without | Gold | 20, 24, 30 lbs. Same as No. 356 but without Flasholite. |
| No. 346 | 285.00 | With | Gold | 15, 20, 24, 30 lbs. High construction, enclosed design. |
| No. 344 | 255.00 | Without | Gold | 15, 20, 24, 30 lbs. Same as No. 346 but without Flasholite. |
| No. 144 | 225.00 | Without | Gold | 15, 20, 24, 30 lbs. High construction, open design. |
| No. 133 | 170.00 | Without | Gold | 12 or 15 lbs. May be equipped with 3-lb. tare beam. High construction, open design. |

## DAYTON—continued

### Models, Prices and Specifications—continued

| | | | | |
|---|---|---|---|---|
| No. 1700 | 155.00 | Without | Gold | 24 or 30 lbs. Without overhead check. High construction, open design. |
| No. 88 | 125.00 | Without | Gold | 10 lbs. without overhead check. High construction, open design. |

### Fan Type

| Model | Price | Finish | Specifications |
|---|---|---|---|
| No. 85 | $135.00 | Gold | Capacity 30 lbs. (10 lbs. on chart; 20 lbs. on each of two tare beams). |
| No. 74 | 265.00 | Grey enamel | Capacity 110 lbs. (10 lbs. automatic computing chart capacity; 10 lbs. tare beam capacity; 90 lbs. in weights; may also be equipped for piece counting. |
| No. 47 | 107.00 | Gold | Capacity 10 lbs. (5 lbs. on computing chart; 5 lbs. on tare beam). |
| No. 75 | $265.00 | Gold | Capacity 100 lbs. (10 lbs. chart capacity; 10 lbs. tare beam capacity; 80 lbs. in weights). |
| No. 166 | 70.00 | Gold | Capacity 1¼ lbs., 2 lbs., 4 lbs. No tare beam. |
| No. 167 | 75.00 | Gold | Capacity 3 lbs. or 5 lbs. No tare beam. |
| No. 120 | 180.00 | Gold | Capacity 2 lbs. on chart. Automatic even balance type. Total weighing capacity limited only by number of weights used. |
| No. 221 | 170.00 | Gold | Capacity 1 or 2 lbs. on chart; non-computing. Similar to No. 120. |
| No. 801 | 85.00 | Gold | Capacity 5 lbs. or 6 lbs. (2 or 3 lbs. on chart; 3 lbs. on tare beam). |

Most models can be furnished with scoop or round pan, instead of flat platform.

**Prices shown are F. O. B. Chicago, Illinois. Add freight differential from factory to other points.**

## DAYTON PARCEL POST SCALES

Made by the Dayton Scale Company, Dayton, Ohio. Sold by their own sales force through branches in all principal cities.

A cylinder type of scale similar to the many models of this company's computing scales, specially adapted for weighing parcel post. Capacity 70 pounds, with chart graduated every ounce. Jewel agate and ball bearings; automatic thermostat; quick stopping device; computes to full capacity. Finish, gray enamel. turquois blue enamel, or gold bronze.

### Models and Prices

Model No. 145, drum type, 70 lb. capacity.....$225.00
Model No. 310, fan type, 25 or 30 lb. capacity, (20-lbs. on chart and 5-lbs. on tare beam, or 20-lbs. on chart and 10-lbs. on tare beam) 200.00

## STANDARD

Made by the Standard Computing Scale Company, Monroe and Library Avenues, Detroit, Michigan. Sold through their own sales force and specially appointed dealers and agents.

A line of both cylinder and fan type computing scales. The construction provides for showing the same weight on all parts of the platform and the design is such that no counter poise is used. Spring and lever construction; polished agate bearings; automatic thermostat; all delicate mechanism enclosed to protect from dirt. Weight and computing price visible to clerk; weight only, visible to customer.



Finish: gold, white enamel, or white porcelain.

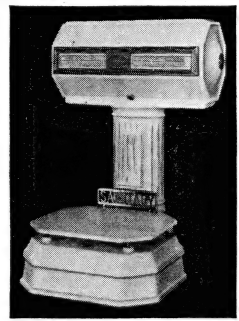
### Models and Prices

Model 8159, porcelain finish ..... $295.00
Model 111, gold finish or white enamel..... 235.00
Model 7111, gold finish or porcelain..... 250.00
Model 510, gold finish or white enamel, electric 285.00
Model 119, gold finish or white enamel, automatic thermostat ..... 235.00
Model 113, gold finish or white enamel, automatic thermostat ..... 240.00
Model 200, fan type, 20 lb. total capacity, 10 on chart, 10 on tare beam ..... $139.00
Model 205, fan type, 30 lb. total capacity, 20 on chart, 20 on tare beam ..... 154.00
Model 1251, heavy duty scale, 250 lb. capacity..... 320.00
Model 1251, heavy duty scale, 500 lb. capacity..... 320.00
Model 1251, heavy duty scale, 1000 lb. capacity..... 320.00

## SANITARY

Made by the Sanitary Scale Company, 565 West Washington Street, Chicago, Illinois. Sold by their own specially appointed salesmen and dealers.

A cylinder type of computing scale for use in retail stores. The finish is solid porcelain fused on at a heat of 1800F.



### Specifications

Constructed on the lever system with three-point lever suspension; no check rods of any kind are employed. Charts are interchangeable and easily removable to allow for quick changing to a completely different range of prices. All charts show a range of forty prices per pound. The cylinder and base are octagonal in design, the column is fluted. All working parts are enclosed with accessible adjustments equipped with double action automatic thermostat and non-pitting interchangeable bearings. Equipped with ball and agate bearings throughout.

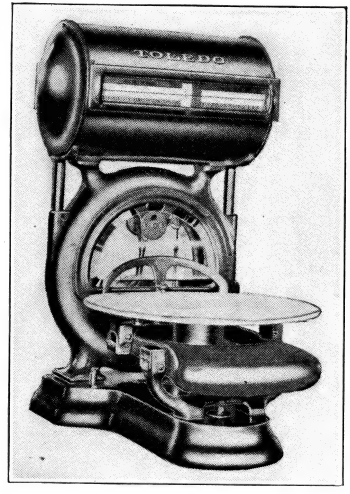
### Models and Prices

24-lb. capacity, equipped with any style chart..... $275.00

## TOLEDO

Made by the Toledo Scale Company, Toledo, Ohio. Sold by their own sales force through branch offices located in principal cities throughout the country.

These scales operate on the lever principle, having single or double pendulums and no springs. Many models are equipped with an in-built electric lighting system to automatically illuminate indications.




### Models and Prices

**Drum Type,** (single pendulum).

| Model | Finish | Price | Weighing Capacity |
|---|---|---|---|
| No. 383 | Gold | $288.00 | 15, 20, 24 30 lbs. |
| No. 381 | Gold | 248.00 | 15, 20, 24 or 30 lbs. |
| No. 397 | Gold | 258.00 | 10 or 15 lbs. |
| No. 583 | Gold | 248.00 | 15, 20, 24 30 lbs. |
| No. 581 | Gold | 208.00 | 15, 20, 24 30 lbs. |
| No. 591 | Gold | 188.00 | 15, 20, 24 30 lbs. |
| No. 592 | Red | 158.00 | 15, 20, 24 30 lbs. |
| No. 593 | Red | 133.00 | 10 or 15 lbs. |

All of the above models contain self-aligning jewel bearings. Equipped with an interchangeable, oval metal platter, porcelain enameled, or can be furnished with pan or scoop if desired.

**Fan Type,** (single pendulum).

| Model | Finish | Price | Weighing Capacity |
|---|---|---|---|
| No. 467 | Gold | $186.00 | 30 lbs. (20 lbs. on chart, 10 lbs. on tare beam). |
| No. 454 | Gold | 156.00 | 30 lbs. (20 lbs. on chart, 10 lbs. on tare beam). |
| No. 447 | Gold | 136.00 | 15 lbs. (8 lbs. on chart, 5 or 7 lbs. on tare beam). |
| No. 424 | Gold | 121.00 | 15 lbs. (8 lbs. on chart, 5 or 7 lbs. on tare beam). |
| No. 437 | Gold | 121.00 | 6 lbs. (on chart, no tare beam). |
| No. 415 | Gold | 106.00 | 6 lbs. (on chart, no tare beam). |
| *No. 787 | Gold | 166.00 | 30 lbs. (10 lbs. on chart, 10 lbs. on tare beam, 10 lbs. on capacity beam). |
| *No. 757 | Gold | 141.00 | 30 lbs. (10 lbs. on chart, 10 lbs. on tare beam, 10 lbs. on capacity beam). |
| No. 777 | Gold | 156.00 | 20 lbs. (10 lbs. on chart, 10 lbs. on tare beam). |
| No. 747 | Gold | 131.00 | 20 lbs. (10 lbs. on chart, 10 lbs. on tare beam). |
| *No. 734 | Gold | 131.00 | 10 lbs. (5 lbs. on chart, 5 lbs. on tare beam). |
| *No. 724 | Gold | 106.00 | 10 lbs. (5 lbs. on chart, 5 lbs. on tare beam). |
| *No. 718 | Gold | 96.00 | 5 lbs. (on chart, no tare beam). |
| *No. 715 | Gold | 81.00 | 5 lbs. (on chart, no tare beam). |

## TOLEDO—continued

| Model | Finish | Price | Weighing Capacity | |
|---|---|---|---|---|
| No. 767 | Red | 106.00 | 30 lbs. | (10 lbs. on chart, 10 lbs. on tare beam, 10 lbs. on capacity beam). |
| No. 405 | Gold | 64.00 | 3 lbs. | (on chart, no tare beam). |
| *No. 797 | Gold | 186.00 | 30 lbs. | (10 lbs. on chart, 10 lbs. on tare beam, 10 lbs. on capacity beam) or regular scoop. Also equipped with small pan attached to end of tare beam, having a capacity of 1 lb. on the chart. This model in addition to being used for general weighing purposes, is also designed for weighing seeds and other small commodities and for material counting. |
| No. 792 | Gold | 156.00 | 30 lbs. | (10 lbs. on chart, 10 lbs. on tare beam, 10 lbs. on capacity beam) or regular scoop. Also equipped with small pan attached to end of tare beam. Same in general construction as above model. |
| *No. 644 | Gold | 141.00 | 30 lbs. | (10 lbs. on chart, 10 lbs. on tare beam, 10 lbs. on capacity beam). |
| *No. 642 | Gold | 131.00 | 20 lbs. | (10 lbs. on chart, 10 lbs. on tare beam). |
| *No. 622 | Gold | 106.00 | 10 lbs. | (5 lbs. on chart, 5 lbs. on tare beam). |
| *No. 615 | Gold | 81.00 | 5 lbs. | (on chart, no tare beam). |
| *No. 605 | Gold | 64.00 | 4 lbs. | (on chart, no tare beam). |
| No. 1605 | White and nickel | 126.00 | 30 lbs. | Hanging type, operating on the gravity principle having double pendulums. Weighing mechanism automatically locks when scale is removed from hook. |
| No. 1001 | Black enamel | 225.00 | 50 to 150 lbs. | on dials. Hanging type with double pendulum mechanism. |

* On models so designated there is an additional charge of $5.00 for white finish.

## TOLEDO INDUSTRIAL BENCH SCALES

Made by the Toledo Scale Company, Toledo, Ohio.

Designed for use wherever product or material is packed or handled on a bench, or where it is desirable to have the gross, tare and net weights automatically indicated.

The line of these scales is extensive, and a wide variety of charts may be obtained to suit specific needs. The few models described here serve to show the equipment provided for this kind of use.

All models have low base completely enclosing the lever system, protecting it from dust and dirt. Agate bearings throughout. May be equipped with flat platform, scoop, pan or platter. Finish, black enamel. A great variety of charts are available, showing weights from a minimum capacity of 8 ounces by 1/16 ounce graduations, to 20 pounds and more by one ounce graduations. Special charts are also furnished for:

Metric graduations.

Combination metric and avoirdupois.

Pre-determined weights with plus and minus graduations.

Gross tare and net weight.

Computing, such as indicating weight per article and computing weight per dozen; or indicating weight of one piece and computing weight of twenty pieces, etc.

## TOLEDO INDUSTRIAL BENCH SCALES—Continued

### Models and Prices

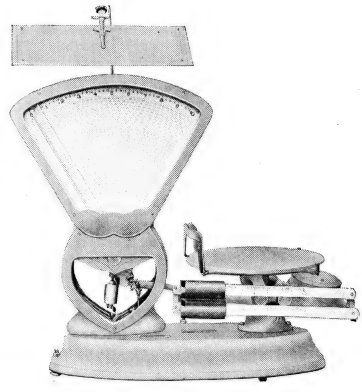
Model 604, fan type, 8 oz. to 4 lb. capacity..... $ 55.00
Model 614, fan type, 20 oz. to 5 lb. capacity..... 80.00
Model 621, fan type, 20 oz. to 12 lb. capacity..... 90.00
Model 641, fan type, 10 lb. to 30 lb. capacity..... 115.00
Model 644, fan type, 30 lb. to 40 lb. capacity..... 125.00
Model 482, fan type, 47 lbs. capacity (gross, tare and net weights).. 250.00
Model 581, drum type, 20 lb. to 50 lb. capacity (gross, tare and net). 185.00
Model 682, fan type, 115 lb. capacity ..... 225.00

**Note:** Gross, tare and net weight scales are provided with separate parallel divisions, each with graduations to show the net weight quickly when the weight for the container varies. When an empty container is placed on the platform, the figure on the top line graduation, at which the indicator stops, denotes the number of the lower graduation division from which the net weight should be read. When the container is more than one pound, the weight of the container, in even pounds, is set on the tare-beam and the number of ounces, in excess of any even pound, indicates, as above described, the division of graduation on the chart from which the net weight may be read.

## PENNSYLVANIA

Made by the National Store Specialty Company, Bareville, Pennsylvania. Sold through dealers.

A line of springless, pendulum, fan type, computing scales for use in retail stores. Most models are equipped with tare beam. Agate bearings; knife edge pivots; finish, gold bronze. All models may be equipped with scoop or pan instead of flat platform, if desired. Dash pot eliminates vibration of indicator and quickens the weighing operation by bringing the indicator to rest quickly. Weight indication and computed price visible to clerk; weight indication, only, visible to customer.



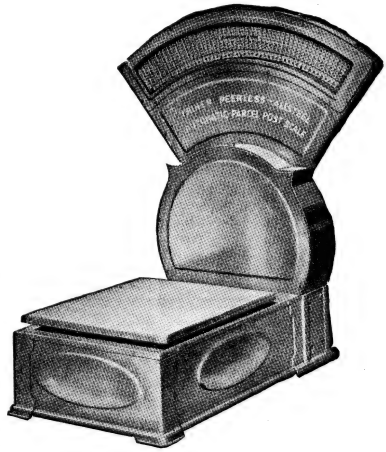
### Models and Prices

| Model | Computing Capacity | Weight Capacity—Total | Weight Capacity—Chart | Weight Capacity—Tarebeam | Price |
|---|---|---|---|---|---|
| No. 6 | 15c to $1.00 per lb..... | 6 lb. | 3 lb. | 3 lb. | $ 75.00 |
| No. 10 | 12c to 80c per lb..... | 10 lb. | 5 lb. | 5 lb. | 85.00 |
| No. 30-A | 6c to 75c per lb..... | 30 lb. | 10 lb. | 20 lb. | 125.00 |

## TRINER

Made by the Triner Scale and Manufacturing Company, 2714 West Twenty-first Street, Chicago, Illinois. Sold through Triner Sales Co., general distributors, 53 West Jackson Boulevard, Chicago, Illinois.

The Triner line of scales are designed for parcel post, postal, express, counting laundry and other medium weight uses. Several models were built according to specifications of the United States Post Office Department.




### Models and Prices

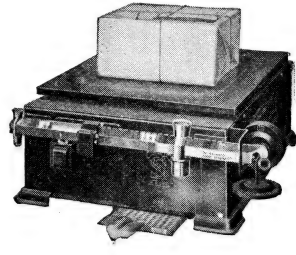
(Prices F. O. B. Chicago)

**Peerless Automatic:** Fan type computing; double pendulum, all steel construction; fully automatic; not affected by level or climatic changes; charts according to requirements, are changeable and renewable. Made in 25, 30, 50, 75 and 100 pound capacities; prices up to $190.00 depending on equipment; parcel post model, 70 pounds...$180.00

**Peerless Net Weight Automatic:** Same as above, but has tare weight shown on chart, and automatically computes net weight up to various capacities; indicator points to tare weight to avoid error, 100 pounds capacity .....$190.00

**Parcel Post and Express:** Beam type; weighs by ounces to 101 pounds; equipped with parcel post rate computing slide chart .....$40.00

**Combination Counting Parcel Post and Express Scale:** Is similar to above beam type, with a large platform, scoop and a small ratio scoop, interchangeable with regular weight hook; counts pieces weighing ⅛ ounce and over, at a ratio of 50 to 1, (for every unit placed in the ratio scoop, 50 units are balanced in the platform scoop). Where weight is required in addition to count, contents of the small ratio scoop can be removed and the poise adjusted to weight in the usual manner. Convertible for parcel post purposes also .....$60.00



## DAYTON

(See page 334)

## TOLEDO

Made by the Toledo Scale Company, Toledo, Ohio. Sold by their own sales force through branch offices located in principal cities throughout the country.

This company manufactures an extensive line of springless, automatic computing scales of both the cylinder and fan types, the latter with or without tare beams.

All models have agate bearings throughout and can be equipped with charts showing computations for both domestic letter mail and parcel post, and also foreign rates. Besides indicating the weight, they also compute the postage on first, second and third class mail and compute the parcel post charges to all eight zones.

### Models and Prices

| Model | Description | Capacity | Price |
|---|---|---|---|
| No. 409, | fan type for mail and parcel post | 1 or 3 lbs. | $ 55.00 |
| No. 729, | fan type for parcel post, and all domestic classifications | 8 lbs. | 100.00 |
| No. 789, | fan type, for express and parcel post | 40 lbs. | 130.00 |
| No. 479, | fan type, for express and parcel post | 70 lbs. | 225.00 |
| No. 389, | drum type, for express and parcel post, computes to full capacity on chart | 70 lbs. | 200.00 |

*Parts Our Specialty*

FOOTLIK BROTHERS

World's Largest Dealers in Computing Scales
Repairs :: Parts :: Refinishing :: Supplies

WHOLESALE — RETAIL

*Scales, Slicers, Registers*
*Bought, Sold, Exchanged*

172 No. Halsted Street :: Chicago

# Scrubbing Machines

## THE FINNELL SYSTEM OF ELECTRIC SCRUBBING

Made by the American Scrubbing Equipment Company, 1225 Collier Street, Hannibal, Missouri. Sold through branch offices in the larger cities throughout the country.

A system of scrubbing large floor areas in business and public buildings by means of power driven machines.

There are three distinct units, each mounted on iron or rubber tired wheels, propelled by hand, with the scrubbing mechanism electrically operated:

**The Scrubber** (which may be used exclusive of the other units, if desired) embodies a revolving ring in which brushes are mounted and to which water mixed (in the machine) with cleansing powder is automatically fed and controlled.

**The Water Absorber** is a combined squilgee and pump, designed to be used as a follower to large Scrubbers. It picks up the dirt and water that has been loosened by the Scrubber. The floor is afterward dried with hand mops, or with

**The Mopping Machine,** a combined squilgee and pump with an additional clean water reservoir tank for flushing the floor after scrubbing machines. Absorbs dirt and filth on first trip over area, and flushes and re-absorbs on second trip.

**The Mop Truck,** while not part of the system, is designed as a convenience in transporting water for mops and keeping clean and dirty water in separate tanks. They are designed to afford convenience, practicability and efficiency in mopping.

### Models and Prices

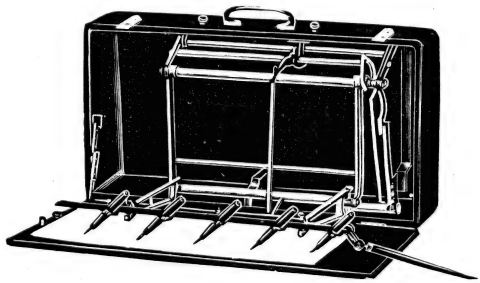
(F.O.B. Hannibal, Missouri.)

| Model | Description | Price |
|---|---|---|
| Scrubber No. 10 | A small size equipment for scrubbing or wax polishing, 12-inch revolving brush, capacity 800 to 1,200 square feet per hour | $175.00 |
| Scrubber No. 20 | Outside diameter 47 inches long, height 67 inches. Contains 8 individual brushes on revolving ring. For large areas | $750.00 |
| Scrubber No. 9 | Has a brush ring 18 inches in diameter. Capacity 2,000 to 3,000 square feet per hour | $500.00 |
| Scrubber No. 5 | Has a brush ring 24 inches in diameter. Capacity 2,500 to 3,500 square feet per hour | $587.50 |
| Absorber No. 5 | For large areas | $180.00 |
| Absorber No. 7 | For smaller areas | $157.50 |
| Absorber No. 10 | A small two compartment pan on wheels, into which water is directed by a hand squilgee | $ 10.00 |
| Mopping Machine No. 5, as described above | | $240.00 |
| Mop Truck No. 2 | Large size, having two 25-gallon tanks | $87.50 |
| Mop Truck No. 3 | Medium size, having two 13-gallon tanks | $69.50 |
| Mop Truck No. 4 | Small size, having two pails | $18.00 |

# Signature Writing Devices

## SIGNAGRAPH

Made by the Signature Company. General offices, 15 Broad Street, New York City. Sold by their own salesmen.



A device consisting of five fountain pens mounted on a universal bar, designed for the simultaneous signing of five checks at one time. It is adjustable to any size check not exceeding 3¾ inches in width and is usually operated in connection with checks printed in sheets. Adjustments are provided for spacing to signature places on different size checks. The tension of each pen can be adjusted to produce uniform action. Usually two thousand signatures per hour can be accomplished.

### Models and Prices

Junior Signagraph, equipped for the writing of five signatures simultaneously, enclosed in a case 20½ inches long by 5½ inches wide by 11 inches high.....$250.00

Ten-pen machines are rented on three-year contracts, at per year... 300.00

The Signature Company maintains a twenty-pen outfit which may be used in their offices. A service charge is made based on the number of signatures.

## FACSIMILE SIGNATURES FROM STENCILS

Signatures on quantities of letters or similar matter are often produced from a stencil on an addressing machine. While such signatures are not acceptable in law on instruments requiring actual signatures, they afford a near approach to the appearance of a pen-written signature.

Signatures of this nature may be produced by any addressing machine using a fibre stencil. The Multi-Stamp described in the Catalog Section under "Stencil Duplicators," is also designed for this use.

The signature is written with a stylus on a stencil (which has been moistened), from which the copies are made by the usual operation of the machine or device.

# Slicing Machines

## AMERICAN SLICING MACHINE

Made by the American Slicing Machine Company, Indianapolis, Indiana, and 209 South State Street, Chicago, Illinois. Sold by their own specially appointed dealers and salesmen.

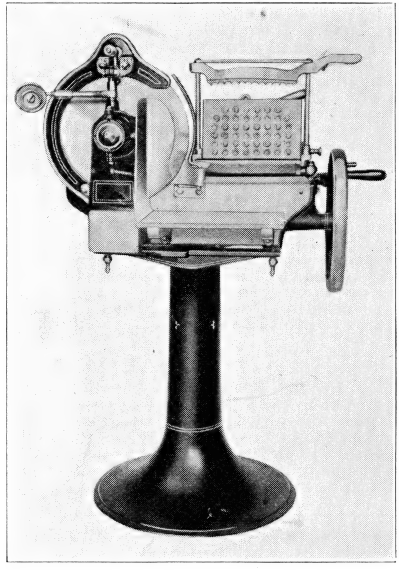
### Principally Emphasized Features

All parts that come in contact with the meat (except the knife) are made of non-corrosive materials and will not rust. The knife is made of nickel-steel.

The sanitary and easily cleaned carriage is mounted close to the base. Particles of meat cannot fall and collect on the base under the carriage. All corners are rounded so that small particles of material cannot be accumulated.

A sharpening device consists of a steel disc, which removes the burr from the knife, and a finishing stone.

The entire cutting edge of the knife is guarded. Guards and meat plate base are easily removed for cleaning. All gears are enclosed and the crank and connecting rod are within the bed of the machine.



An end-plate device eliminates meat waste by providing for the cutting of the end piece to the last slice. Corkscrew pins with their points leading away from the knife, hold the meat snugly to the plate and support it while being cut.

A ball grip feeding device insures accuracy in slicing and provides for any number of thicknesses, from nothing to a full one-half inch.

### Models and Prices

Model T, price F. O. B. Indianapolis, Indiana.....$325.00

## DAYTON MEAT SLICER

Made by the Computing Scale Company, Dayton, Ohio. Sold by their own sales force through branch offices located in principal cities.

The features which the manufacturers emphasize for this machine are:

A micrometer gauge, enabling the operator to cut meats in any varying degree of thickness from 1/64 of an inch to ½ inch.

A swinging safety knife guard, prevents accidents to the operator.

The construction is such that the machine is easy to take apart and clean;

The receiving pan is a slab of sanitary opalite glass, removable;

Ball bearings with end thrust adjustment;

Removable knife shield;

Shark tooth clamp, enabling the operator to cut down to last slice, eliminating waste;

Bull dog grip holder;

Double grinders for beveling and keen edging (grinders can be removed for cleaning);

Damascus steel blade, 14⅛ inches in diameter; ¼ inch thick;

Scrap pan for catching all scraps under the knife is made of heavy nickeled brass and is removable;

All other working parts are heavily nickeled.

Price, including one feed plate and two clamps and revolving pedestal ..... $365.00

## DAYTON BREAD SLICER

Made by the Computing Scale Company, Dayton, Ohio. Sold by their own sales force through branch offices located in principal cities.

Designed for accurate and speedy cutting of bread in quantities. The bread is laid in a trough and feeds automatically under a revolving knife. Hand operated from a fly wheel at the end of the machine. Adjustments are provided for cutting any thickness of slice.

Price ..... $95.00

## ROYAL MODEL No. 50

Made by the A. J. Deer Company, Incorporated, Hornell, New York. Sold by their own specially appointed dealers and salesmen.

A gear driven, hand operated slicing machine, noiseless in operation. All exposed parts are readily accessible for cleaning. Knife is made of tool steel 14" in diameter, ⅜" thick, mounted on ball bearings. Equipped with double automatic sharpener. Meat clamp adjusts itself automatically to conform to the shape of the meat and prevents it from slipping. Adjustable to slice any thickness from 2 to 120 slices to the inch. Meat tray is of sanitary opaque glass.

**Model No. 6:** Is electrically driven, similar in general appearance to the Model No. 50.

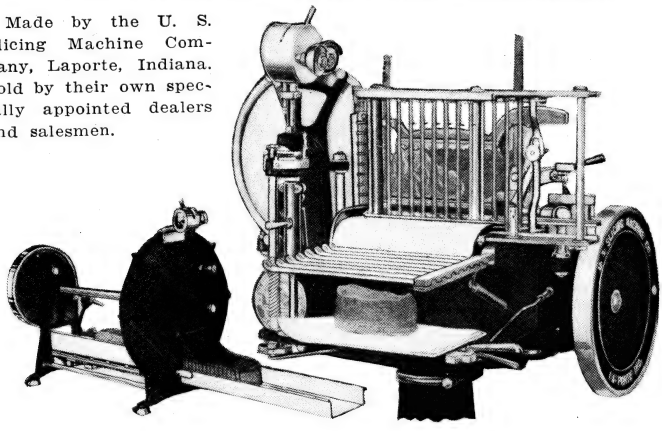
**Model No. 40:** Is designed for use where the speed and capacity of the larger machines is not required. Its operation differs from all other models. The knife, which is circular, is mounted on an upright hand lever and as the lever is drawn down, a pinion gear attached to the axle of the knife, engages a geared segment causing the knife to rotate. The cutting action of the knife on the meat and the direction of the stroke, is the same as on the hand wheel models. Provided with a knife guard and equipped with a double automatic knife sharpener.

### Models and Prices

| | With Pedestal | Without Pedestal |
|---|---|---|
| Model No. 50, hand operated | $450.00 | $375.00 |
| Model No. 6, electrically operated | 650.00 | 575.00 |
| Model No. 40, hand lever operated | | 175.00 |

## U. S. SLICING MACHINE (Van Berkel's patent)

Made by the U. S. Slicing Machine Company, Laporte, Indiana. Sold by their own specially appointed dealers and salesmen.



Bread Slicer Meat Slicer

### Principally Emphasized Features

All parts of the machine coming in contact with the meat (except the knife) are constructed of non-rusting, non-corrosive monel metal.

The individual meat grip simplifies the work of slicing soft or ragged pieces of meat and also makes it possible to slice small ends perfectly. It consists of a plate, having a series of needles or prongs arranged in parallel columns, which after gripping the meat, clamp alternately to right or left holding the piece rigidly against the plate, allowing of cutting to the last slice.

A two stone automatic sharpener, applies individual grinding stones to both sides of the knife; operated by a small lever. When not in use, the stones of the sharpener are entirely clear of the knife.

Automatic rind remover. By moving a control knob, a small knife projects against the bottom of the piece being cut and severs the rind, slice by slice, just previous to the cutting by the large circular knife. The height can be adjusted according to the thickness desired.

The Automatic Stacker, (on Model No. 150) comprises a gate operating with a sliding motion, which supports the slice after it has been cut and conveys it to a reciprocating tray, which in turn deposits the slices one above the other on a receiving table. It is completely automatic in its action.

### Models and Prices

| Model | | Price With Pedestal | Price Without Pedestal |
|---|---|---|---|
| No. 100 | Hand operated | $440.00 | $385.00 |
| No. 125 | Electrically operated | 585.00 | 525.00 |
| No. B | Small capacity, hand operated | 285.00 | 245.00 |
| No. 150 | Electrically operated, equipped with stacker. | 850.00 | ..... |

## U. S. BREAD SLICER

A device for accurately and quickly slicing bread in quantities.

The principal feature of its construction is the cutting action of the knife which is circular, hollow ground and bevel edged. When the hand wheel is operated, the knife describes an elliptical revolution and at the same time, is caused to rotate on its own axle. Thus, when it strikes the bread, the whirling motion of the knife itself and the cam motion causes clean and precise cutting without crushing or tearing the loaf.

Feeding and receiving trays are made of non-rusting, non-corrosive monel metal. A safety curtain covers the aperture in the knife housing, automatically, when the bread is removed. The knife is perfectly balanced so that it swings upward away from the aperture when the machine is at rest, and cannot be put in motion until the fly-wheel is turned, thus avoiding danger of accidental descent. A feed index is provided to adjust the thickness of slice.

Price ..... $215.00

*Because descriptions have not been charged for, and all machines have been included, the DIGEST is the only book ever published that tells the whole story.*

# Stamp Affixers

(See also Postage Permit Printers)

The increasing use of stamp affixing machines has been recognized by the Post Office Department, who now provide six denominations of stamps wound in rolls of five hundred and one thousand. They may be had rolled sidewise or endwise, perforated or unperforated. Denominations are: one, two, three, four, five and ten-cent. They can be had at any post office, or if postmasters have none in stock, they are required to provide them to fill all local needs. Few post offices are without them.

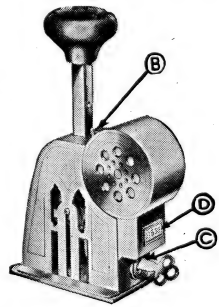
## MULTIPOST

Made by the Multipost Company, Rochester, N. Y. Sold direct and through dealers and agents.

Two styles of Multiposts are made; those for moistening and affixing stamps and those for issuing stamps without affixing. All models are of sectional construction allowing for interchange of containers carrying different denominations of stamps.

### Models, Specifications and Prices

Model X Affixer, carries stamps wound in rolls, affixing them automatically by the operation of a down stroke of the plunger similar to the operation of a self-inking rubber stamp. Affixing is accomplished by spraying water under the stamp on the envelope and applying the stamp under pressure, automatically. Non-spilling water reservoir; equipped with lock or stamp compartment .....$25.00




Model PT Affixer, same as Model No. X; has an extra lock against operation as protection against use by unauthorized operator.....$30.00

Model RT Affixer, illustrated. Same as Model No. PT, and has a counter to register the number of operations of the machine. Useful in counting mail, etc., as it is stamped. ("B" in illustration shows operating lock, "C" shows stamp compartment lock, "D" recording counter).....$35.00

Model CT Affixer. Similar to Model No. RT, except that the counter counts the stamps actually used instead of the operations of the machine.....$40.00
Interchangeable stamp containers for use on any model .....$5.00
Extra stamp containers with counter for Model CT only.....$10.00

Model DT issues stamps but does not moisten or affix them. Complete with lock .....$10.00
With counter ..... 15.00

Parcel Post Machine, consists of multiples of Model No. DT fitted on a base. Issues stamps but does not moisten or affix them. Each unit can be used as independent machine or in connection with affixing model Multipost. Units fitted with individual locks.

## MULTIPOST—continued

Model XB Parcel Post Machine, protecting features like on Model X Multipost; per section ..... $10.00

Model PP Parcel Post Machine, protecting features like on Model PT Multipost; per section ..... $12.50

Model CP Parcel Post Machine, recording and protecting features like on Model CT; per section ..... $15.00

Moistener, $2.50 extra, cabinet containing two drawers and case, $7.50 extra.

## RO-TA-RE

The Service Machines Company, 79 Sudbury Street, Boston, Mass., in November 1920 announced a stamp affixing device, operated on a rotary principle, that provided for the affixing of stamps from rolls by a rotary action, said to be similar to the action of the fingers in affixing stamps. It is impossible to locate the company and it is not known whether the device has ever been marketed.

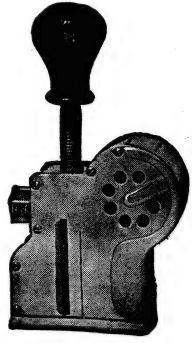
## STANDARD STAMP AFFIXER

Made by the Standard Stamp Affixer Company, Everett, Massachusetts.

The Standard Stamp Affixer operates by a single pressure of the plunger, which moistens the stamp and affixes it under pressure. It holds a roll of 500 stamps, wound sidewise. Provided with case lock and may be equipped with a register to record the number of stamps used.

Model E, without register ..... $20.00

Model E, with register ..... 25.00



*You can rely on the knowledge gained from the DIGEST because it is complete, compiled by disinterested experts, and includes all machines.*

# Stencil Cutting Machines

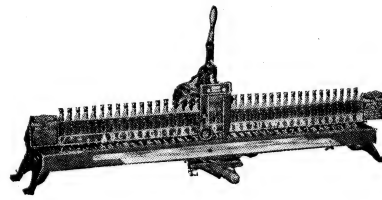
## BRADLEY

Made by the Bradley Stencil Machine Company, main office and works: 3745 Forest Park Boulevard, St. Louis, Missouri. Sold exclusively through their own salesmen.

Bradley machines are made in two styles: (1) The Standard horizontal type which follows the design of the original machines first put on the market approximately thirty years ago, and, (2) the circular or dial type.

All models are visible operating, equipped with punches and dies forged from solid pieces of tool steel bar made by an exclusive process.

### Models, Specifications and Prices



Model A—Horizontal type; ¾ inch Roman design characters; cuts 5 lines any length; keyboard and dies arranged in a straight line, are stationary; the operating lever mechanism and table on which the stencil board is placed are designed to travel to the die position of the character wanted; spacing is uniform for each character and is automatic; regular equipment includes stand legs; overall width 48 inches, weight net, 150 pounds. Price .....$125.00

Model B—Same as Model A but with ½ inch block design characters, cuts 6 lines, any length.....$125.00

Model J—Circular type; ¾ inch Roman design characters; cuts 4 lines any length; keyboards and dies are arranged in circular formation and are rotated by a disk wheel situated on the top of the machine; the stencil board remains fixed except for spacing which is uniform for each character and automatic; the handle can be used in two positions; graduated table; weight net, 100 pounds .....$110.00




Model J

Model K—Same as Model J, but with ½ inch block design characters; cuts 5 lines any length .....$110.00

Model G—(Giant model). Circular type; 1¼ inch Roman design characters; cuts 3 lines any length; generally similar, but of heavier construction than Model J; weight net, 200 pounds .....$170.00

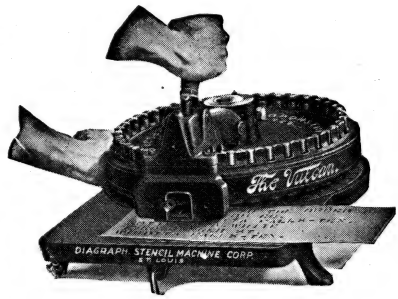
Model H—Same as Model G except equipped with 1½ inch Roman design characters; weight net, 200 pounds .....$185.00

Prices include delivery East of Denver and include 12 pounds of stencil paper and all initial supplies.

## DIAGRAPH

Made by the Diagraph Stencil Machine Corporation, St. Louis, Missouri. Sold through specially appointed dealers and salesmen.

Circular or dial type. First marketed 23 years ago. Special features include: Interchangeable punches and dies, providing for quick replacement by the user of damaged characters; stationary dial having a revolving indicator actuated by a hand wheel; visible operation; unlimited stencil lengths; automatic feed; variable line space.




Open Model

### Models, Specifications and Prices

Housed Model, ½ or ⅞-inch Roman design characters; cuts 4-line stencil of ⅞-inch characters, 6 lines of ½-inch characters; weight, net 115 pounds .....$110.00

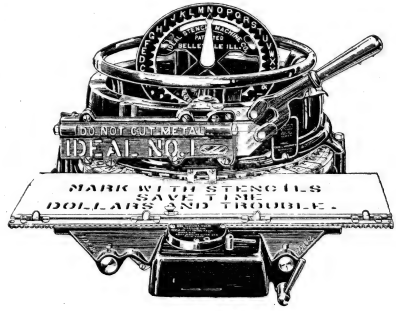
Open Model, same as above, but with housing removed to allow for frequent oiling and cleaning when used where subject to atmospheric conditions tending to cause rust or corrosion, such as in fish houses, packing plants, etc. Weight, net 89 pounds.....$110.00

Jumbo Model, extra heavy construction, 1¾-inch Roman design characters; cuts 4-line stencils, any length; weight, net 254 pounds....$200.00

## IDEAL

Made by Ideal Stencil Machine Company, general offices and factory: Belleville, Illinois. Sold through specially appointed dealers and agents.

A rotary type stencil cutting machine, hand operated.




### Models and Prices

No. 1, cuts 1 inch characters .....$125.00

No. 2, cuts ⅝ inch characters ..... 110.00

No. 3, cuts 7/16 inch characters ..... 110.00

Steel stencil filing cabinets.

Size No. 1 for 2500 stencils .....$35.00

Size No. 2 for 2500 stencils ..... 30.00

## ELLIOTT

The Elliott Addressing Machine Company, whose products are fully described in the section "Addressing Machines," makes a machine for cutting Gothic style typewriter size characters in stencil cards for use with other addressing machines. The stencil provided is also extensively used for many other purposes such as to affix descriptions and captions to lantern slides, etc.

## MARSH

Made by the Marsh Stencil Machine Company, Belleville, Illinois. Sold direct and through specially appointed dealers and agents.

The Marsh is a machine of circular design, hand operated, visible operating.




### Models and Prices

Model No. M cuts ½-inch characters, 4 lines, 18 inches long or 5 lines in length. Operated by dial on top of machine, the stencil form remaining stationary; interchangeable right or left hand operation. Size 22 inches long by 22 inches wide by 8 inches high; weight 85 pounds.
Price .....$95.00

Model No. A, same as above, except that it cuts ¾-inch characters.
Price .....$95.00

Price includes freight allowance of $2.50 per machine and all initial supplies.




Fountain brush for use with the above machine, ink in handle, button controls flow. Interchangeable tips. Price .....$3.50

## QUANTITAG

**(See Addressing Machines)**

## UNITAG

**(See Addressing Machines)**

*After you read any advertisement—of any business machine in any magazine or other medium, complete your information by referring to the DIGEST.*

# Stenographic Machines

## SHORTWRITER

Made by the Shortwriter Company, main office: 343 South Dearborn Street, Chicago, Illinois. Sold through high schools, business colleges, etc., where course is taught, and also sold direct by mail.

A small portable machine, weighing 6¾ pounds, for the mechanical writing of shorthand. It may be used for any language, the words being written phonetically (by sound) without regard to spelling. Its construction and operation is somewhat similar to a typewriter in that it has a keyboard and prints characters (word signs) on an automatically fed and spaced continuous strip of paper similar to an adding machine roll. The characters are printed through a ribbon and appear in fixed individual vertical columns. Several keys may be struck together to write one or more words at the same time. The printing is visible. Silent in operation.

The keyboard consists of 24 character keys and a shift key. The letters of the alphabet are arranged on the keys so as to afford practically the entire alphabet on both sides of the keyboard, allowing any combination of letters to be struck by the operator without crossing the keyboard.

With but few exceptions all keys carry two letters and one punctuation mark or figure. The letters on each key are similar in sound, such as t d, m n, p b. A trained operator distinguishes which letter is desired for the particular word. The shift key is used in printing punctuation marks or figures. An error key prints a distinguishing mark opposite the point where corrections are to be made and may be inserted at any point by rolling back the paper strip.

A course of approximately six months has been designed by the manufacturers for the training of operators.

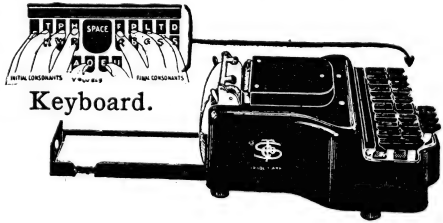
### Models and Prices

Made in two models, differing only in mechanical construction.....$76.50

## STENOTYPE

Formerly made by the Stenotype Company, Indianapolis, Indiana. Some years ago, a receiver, the Fletcher Savings and Trust Company, Indianapolis, Indiana, was appointed. Manufacture has been discontinued. Supplies, parts and rebuilt Stenotype machines are supplied by the Stenotype Supplies Company, 220 East Ohio Street, Indianapolis, Indiana.

This machine was designed for the mechanical production of a system of shorthand called Stenotypy. It is a system of plain English spelling with the silent letters dropped. The word "street" is written S-T-R-E-T. From a keyboard, illustration of which is shown herewith, combinations of letters are printed on a continuous strip of paper, fed automatically as the machine is operated. One or several keys, representing an entire word and even whole phrases, are written at one stroke. Its



Keyboard.

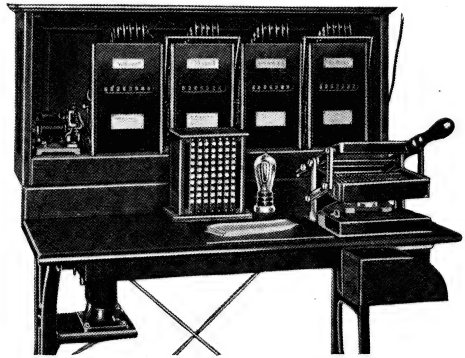
(Continued on page 366)

# Tabulating Machines

## HISTORY

In 1880, at the close of the completion of the tenth United States Census, Dr. Herman Hollerith, an engineer and special agent of the tenth Census, established a system of recording the descriptive data for each individual or each unit of inquiry, by punching holes in strips of paper or cards which could be adapted to control electrical mechanism, in the form of counting or adding devices, either singly or in combinations.

The first patents, issued to Dr. Hollerith in 1889, are the basis of the apparatus then used and subsequent applications of the system, as consisting of recording separate statistical items pertaining to the individual, by means of holes or combinations of holes, punched in sheets of electrically non-conducting material and bearing a specific relation to each other and to a standard, and then counting or tallying such statistical items, either separately or in combination, by means of electrical counters operated by electro-magnets, the circuits through which were controlled by the perforated cards.



**The Original Tabulating Machine**

The findings of the commission of statisticians, appointed to make a practical test of his device, stated that recording by punching could be done more rapidly than by writing on slips, and that tabulating by machine was about eight times as rapid as the hand-sorted slip method, as well as being more accurate.

The equipment was then used for tabulating the returns of the eleventh census and proved so successful, that its use was continued in each census subsequently made.

Installations by railroad and commercial houses followed. Today they are used in both large and small establishments in practically every line of business.

## PURPOSE

Tabulating machines are designed for compiling statistics in cost accounting, stock accounting, sales analysis, appropriation and expense distribution, transportation accounting and statistics, insurance accounting and statistics, and for various other kinds of accounting and statistical data.

## TABULATING MACHINES—continued

Through their use, it is easily possible to secure by mechanical methods, a daily printed report of every pertinent fact in relation to the daily condition in the factory or other establishment.

Records thus obtained, showing daily conditions of stockrooms, production of each department, the delays and lost time, the percentage of completion on orders, with each and every detail of labor, supplies and overhead charges, enable those responsible to keep in intimate daily touch with the entire business they control. Such records show actual conditions and make it possible to correct manufacturing errors and losses immediately. They can be applied to any organized accounting system, without changing or affecting in any way the system in operation.

A few of the many records which they compile are:

**General:**

Records of employment
Daily superintendent's reports
Daily production reports
Analysis of labor efficiency
Recording idle time by causes
Printing finished pay-roll sheets
Distribution of labor charges
Operation costs by departments and jobs
Record of orders and shipments
Departmental efficiency
Material receipts and disbursements
Distribution of material charges
Spoiled work reports
Continuous inventory
Daily material consumption
Purchase order records and receipts
Expense distribution
Analysis of sales and cost of sales
Income tax reports

**Sales Analysis:**

including

Total sales by territories, (quantity, kind, amount and cost)
Total sales by commodities, (quantity, amount and cost)
Total sales by customers, (quantity, kind, amount and cost)
Total sales by salesmen, (quantity, kind, amount and cost)
Total sales by cities, states, countries, etc.

Also, complete listing and adding of amounts.

**Railroad Accounting:**

including

Freight accounting
Station accounting
Disbursements
Storekeeping Accounts
Shop and Cost Accounting
Claims, Materials, etc.

**Insurance Accounting and Statistics:**

including

Data regarding each policy, cancellation, reinsurance and loss, showing classification, agency, policy number, date of issuance and expiration, amount of insurance and premium. From the cards, direct reserve and classification statistics are segregated, compiled, and printed records obtained. Agency results, classifications, and numerous other factors pertaining to insurance work are analyzed.

## PRINCIPLES OF OPERATION

The basis of the method is a thin, flexible card, measuring approximately 7⅜ x 3¼ inches, on which is printed a form specially designed for each particular user and each particular purpose. Perforations are made by a

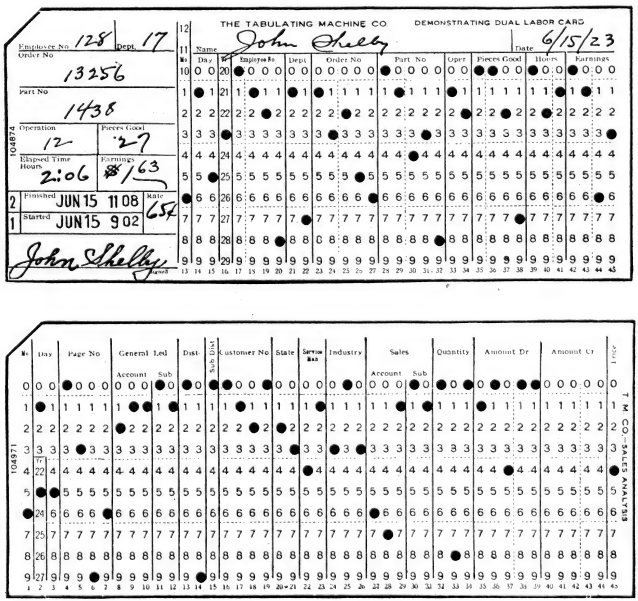
## TABULATING MACHINES—continued

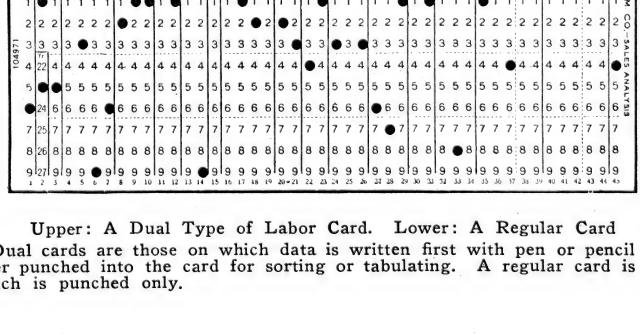
punching machine at certain numerically arranged positions in the card, from which perforations the mechanism of the sorting, counting and tabulating machines are automatically actuated and controlled. Each perforation represents an itemized fact and as many perforations may be made as required to give every detail of each fact.

Cards are printed with vertical columns of figures, running from 0 to 9 or 0 to 12, and separated into groups of one or more columns called **"fields"**. Each field relates to one item, such as date, job number, quantity, value, etc. Every fact to be recorded upon the card must be expressed in figures. In business operations, most facts are numerical and it is easy to cast others, that are not, into numerical form.

Irrespective of the arrangement of the printing on the face of the card, the exact numerical perforating positions are always maintained.

When these cards are inserted in the sorting machine, they are automatically sorted according to the perforations, (that is, according to the




Upper: A Dual Type of Labor Card. Lower: A Regular Card

Dual cards are those on which data is written first with pen or pencil and later punched into the card for sorting or tabulating. A regular card is one which is punched only.

## TABULATING MACHINES—continued

fact desired as previously punched on the card), and for which the sorting machine is adjusted. Or, they may be placed in the tabulating machine which mechanically selects and automatically prints and totals the numbers, representing amounts or other data, represented by the facts, on ruled sheets or roll paper.

Cards are of two kinds: Dual cards are those on which the data is both written and punched; single cards are those on which the data is punched only.

## HOLLERITH SYSTEM

Made by the Tabulating Machine Company. General offices, 50 Broad Street, New York City. Rented on a lease basis by their own sales force, through branch offices located in principal cities throughout the country.

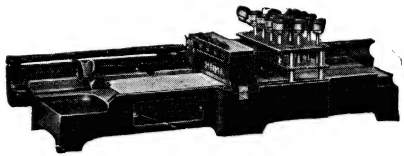
### Cards

Cards are printed with vertical columns of figures, running from 0 to 9 and separated into groups of one or more columns called "fields". Each field relates to one item, such as date, job number, quantity, value, etc.

Cards may be printed with a form to suit the requirements of each user, or for each condition.

### Punching Machines

The punching machine is a device for perforating holes in their proper positions in the cards. It is equipped with ten punches, each operated by one of the keys, numbered from 0 to 9 on the keyboard, and an additional punch and a key marked "X" for the purpose of skipping any given fields which are frequently omitted.



**Key Punch**

The card is inserted in the punch rack and pushed to the right, similar to the operation of a typewriter carriage, until the first column of the desired field is directly under the punches. After a numeral has been punched, the machine automatically feeds the card forward to the next column. An experienced key punch operator should punch at least 2,000 cards per day.

The "gang-punch" is arranged with a number of removable punches, which can be changed easily and set for any desired combination of month, day, etc., and as many as eight or ten cards can be punched simultaneously.

### Sorting Machines

The sorting machine provides for sorting cards automatically into predetermined classifications at the rate of 250 cards per minute.

### Tabulating Machines

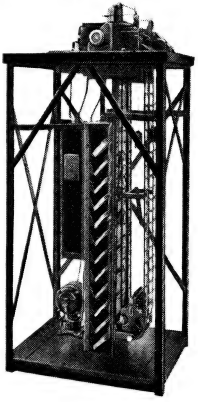
The tabulating machine provides for showing the result in figures, on counters, of the different facts, represented by the punches in the cards,

## HOLLERITH SYSTEM—continued

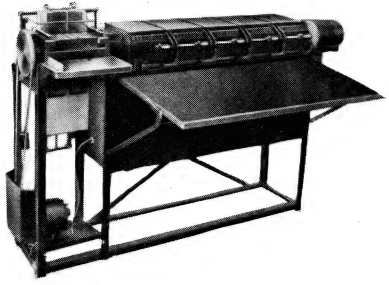
so that a group of units are at one operation transferred to the adding wheels of the counter.

Cards are fed into a hopper of the tabulating machine in lots of 400 or 500 at a time, and pressed forward against a knife edge which feeds the cards into the machine, one at a time, at the rate of 150 per minute.

Tabulating machines are made in varying sizes. Those in general use have five different counters, capable of handling simultaneously forty columns of figures on the cards, and supplying as many as 750 totals every minute.



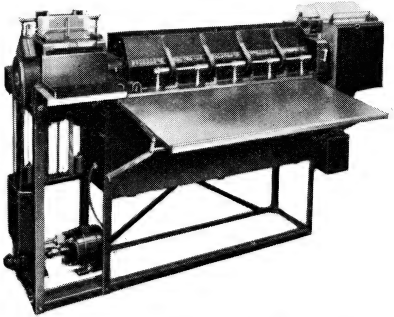
Electric Sorter



Tabulating and Counting Machine

### Listing and Totaling Tabulating Machine

This machine is provided with an automatic control for stopping the machine at the end of a group of cards. What it does is to compare each card as it passes through the tabulator feed, with the succeeding card. Where the holes in the controlling field differ, the machine is stopped and the total taken.



Listing and Total Printing Tabulating Machine

For example: If the results of salesman No. 125 were being tabulated, as soon as the last card for that salesman has passed, the machine automatically prints the total and then proceeds tabulating the next group of cards.

The total printing and listing feature is a device that prints each separate item and the group totals, on a strip of paper running through

## HOLLERITH SYSTEM—continued

the machine. The operation is entirely automatic, the operator being required only to feed the cards in the hopper and remove the tabulated cards from the stacker below. When the last group of cards is fed through, the machine automatically stops, prints the desired totals, clears or resets itself, and then resumes the operation of tabulating.

### Prices

| | |
|---|---|
| Key punching machine, (purchased outright) | $100.00 |
| Verification punching machine, (purchased outright) | 110.00 |
| Gang punching machine, (purchased outright) | 125.00 |
| Sorting machine, rental price per month per unit | 25.00 |
| 3-counter tabulating machine, rental price per month per unit | 50.00 |
| per month per unit | 100.00 |
| 5-counter printing tabulator, rental price per month per unit | 150.00 |
| 7-counter printing tabulator, rental price per month per unit | 200.00 |

## POWERS

Made by the Powers Accounting Machine Company. General offices, 115 Broadway, New York City. Rented on a lease basis by their specially appointed sales force, through branch offices located in all principal cities throughout the country.

Comprising several types and various models of automatic punching, sorting and counting machines, as described below. Complete batteries of machines, (separate units for punching, sorting and tabulating), are leased under contract, on a monthly rental basis. The rental charge includes the cost of maintenance and repairs.

**Cards:** Standard base card measures 7⅜" wide by 3¼" deep, on which is printed 45 columns of numerically arranged positions, each column having a range of figures from 0 to 12. From this standard base card, a numerical arrangement can be effected to provide the desired results from the varying working conditions.

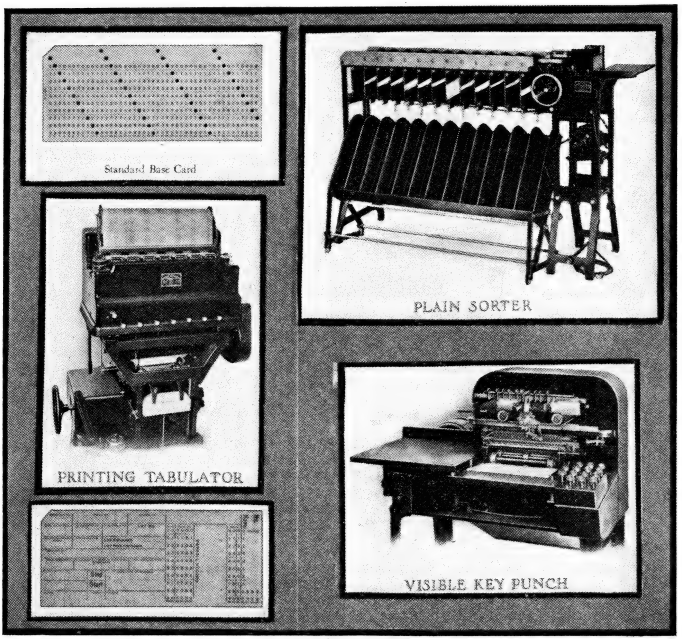
These cards are supplied by the manufacturers in manila and standard colors.

### Punching Machines

**Automatic Key Punch:** Designed to perforate cards, when the information to be punched in the cards is secured from other than the card itself. The operator depresses the keys on the keyboard, corresponding to the information desired. Repeated facts can be "gang-punched" in any position on the card by the same operation. Corrections can be made before the card is perforated. The machine is equipped with a carriage escapement, similar to that of a typewriter, with an indicator showing where the set-up is being made, and is also equipped with column skips, adjustable to the design of the card used. Feeding and ejecting of cards is automatic. Motor driven.

**Automatic Visible Key Punch:** For use in punching visible or dual cards when the perforations are desired in the same card on which the original information is written. This type of machine is particularly adaptable to the perforating of job cards, material requisitions and cards of a similar form, when the tabulating cards are used as an original record. Motor driven and otherwise similar in operation, (except automatic card feed), to Automatic Key Punch above described.

## POWERS—continued




**Automatic Slide Punch:** Used principally when many repeated factors are involved. Equipped with 45 slide bars, each slide having 12 numerical positions representing the corresponding column position on the card. Automatically feeds and ejects cards and permits of verification and correction before the cards are perforated. Each slide can be set for gang-punching of automatically repeated numbers and ciphers. Motor driven.

### Sorting Machines

**Automatic Plain Sorter:** This machine is the medium through which cards are mechanically sorted into desired groups and factors of a like classification. The cards are placed in the feed magazine and the machine is set in motion by pressing an electric button. Cards feed automatically into machine, and are mechanically segregated and sorted into their proper receiving boxes. The selective and operating mechanism has a gravity feed, permitting the machine to operate continuously at an approximate column sorting speed of over 16,000 cards per hour. Equipped for selective digit sorting in 12 positions.

The receiving boxes are placed in a row directly in front of the operator. Each box will accommodate several hundred cards.

## POWERS—continued

**Automatic Counting Sorter:** This sorting machine is equipped with special counting dials, enabling the machine to register the number of cards entering each receiving box, together with sub-total and grand total counters, which register the totals of all cards passing through the machine. In this same operation the cards are automatically sorted. With the exception of the counting dials referred to, the Automatic Counting Sorter is similar in design and operation throughout to the Powers Automatic Plain Sorter. Approximate column sorting speed is 15,000 cards per hour.

These machines are extensively used for special statistical work requiring the addition of units only, and where the addition of monetary or other amounts is not involved. Machine is particularly adapted to the compiling of statistics in connection with employment records, industrial relations, safety and welfare, vital statistics, research, life insurance and census work. Motor driven.

## Tabulating Machines

**Automatic Tabulator-Printer:** Automatically prints final reports from punched cards. The machine runs continuously without manual assistance until the last card has passed through the machine and the printed tabulation has been completed; it then stops automatically. All subsequent tabulations involving printed reports and records, after the cards have been automatically sorted into desired groupings of a like classification, are obtained in a similar manner.

The machine is equipped with 7 units, which function simultaneously. Each unit of the machine will add, or designate units or amounts as desired. This is accomplished either in detail (printing the information from each card) or in totals only, printing the designating factors for each group of which the totals are comprised. Each adding or designating unit has a capacity of 999,999,999.

The machine is so constructed that the printing mechanism can be controlled by a series of selection buttons on the front of the machine, making it possible to either add or designate in any of the seven units, or to select and print from the cards only that information desired in connection with a particular tabulation, thereby rendering the machine entirely flexible as to operation.

Complete printed reports can be secured either on roll paper or on specially ruled forms or sheets. Printing on such forms can also be arranged to accommodate subsequent typewritten, addressing machine or written information—all in perfect alignment with the numerical factors printed from the Tabulator. The usual number of carbon copies can be secured.

## Rental Rates

Punching machine, rental per month per unit.....$ 25.00
Sorting machine, rental per month per unit..... 40.00
Tabulating machine, rental per month per unit..... 100.00

Above prices do not include cards.

If all three units are rented, the combined price for three units $145.00 which price also includes the cards.

# Tape Sealing Devices

Of all the different services a store gives its customers, the package is the most important in building up goodwill. Anything, therefore, which improves the appearance of a package and saves time in wrapping is bound to win trade.

When it is realized that the ordinary shoe store uses 9 feet of cotton twine to tie a shoe box, which 6 inches of tape would seal, the growing popularity of package sealers can be readily understood. If properly sealed, a package is safer, looks neater and should be sealed in about one-third of the time required to tie it; besides, one-quarter less paper is needed for a package that is sealed than for a package that is tied.

It has been demonstrated in many kinds of tests that practically any package can be more shapely and more securely sealed than it could be tied. A handsome, firm parcel feels good to the hand. When a parcel breaks open, spilling the contents, it is more often a reflection on the management or clerk in the store, than it is on the customer carrying it.

Granting that the sealing of packages is more satisfactory than tying them, the purchase of package sealing equipment resolves itself into the consideration of three points, viz:

1—The speed with which the device will moisten the tape and allow the sealing of the package.

2—The evenness, completeness and uniformity with which the tape is moistened.

3—The labor saving refinements that are incorporated in the machine, and

4—The consideration of price.

Specially printed, gummed tapes can be supplied by practically all of the different makers or may be had from any large paper company. The United States Post Office Department has recently made a ruling allowing parcel post packages to be completely sealed, providing they bear a notice that the Post Office employees may open the package for inspection. This ruling should add greatly to the popularity and usefulness of tape sealed packages.

## ADVANTAGES OF CARDBOARD AND CORRUGATED PAPER PACKING CASES OVER WOOD

A great many concerns in recent years have done away entirely with the use of wooden packing cases and have substituted cartons made of paper or corrugated strawboard, held together and sealed with gummed tape. The advantages are obvious. Cardboard cases if broken can readily be repaired, whereas with wooden cases repairs are often difficult or impossible. Splinters and wounds from projecting nails cannot occur with cardboard cases; their use does away with a noisy packing room and all tools it entails. Wooden cases bought assembled, are too bulky; if bought in pieces, the cost of assembling is heavy. Cardboard cases arrive flat; thousands can be stored in a small space; they can be set up readily, noiselessly and economically; they stand stravelling as well as any wooden case, protect their contents better from shock as is proved by their exclusive use for such delicate articles as incandescent electric light bulbs. They save carrying charges because of decreased weight in bulk.

Experience has shown that claims for pilferage in shipment have materially decreased when tape sealed containers are used. The package arriving with an unbroken band is an almost sure indication to the consignee that it has not been tampered with on the way.

Printed tapes provide an excellent advertising medium at a cost a great deal less than stamping or stenciling of packing case boards.

## COUNTERBOY PACKAGE SEALER

Made by Better Packages, Incorporated (formerly American Nonseal Works, Inc.), 8 Beach Street, New York City. Sold direct and through specially appointed dealers.

The Counterboy is a moistening device for package sealing tape.

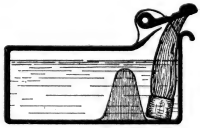
Its distinctive feature is a rubber set brush set in a water reservoir,—the water feeding by capillary attraction to the end of the brush.




In operating, a handle on the top of the machine is drawn forward, feeding the gummed tape between a self adjusting pressure plate and the wet brush. Adjustments are provided by which the exact amount of tape needed is moistened, after which it is cut off and partly ejected from the mouth of the machine.

During this process, it is unnecessary to touch the tape with the hands, the design of the machine being such that its mouth is at the correct height to allow all ordinary size packages to be held under it in position to receive the tape. The smoothing out of the tape on the package to make it adhere is its only contact with the hands.

Standard size rolls of tape can be carried in a frame provided in the machine and the water reservoir is ample for continuous use over a considerable period without renewing.



Illustrating Interior Construction

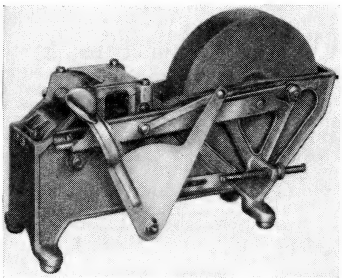
### Models and Prices

Counterboy Package Sealer, regular model. $20.00
Counterboy Carton Sealer, using tape 3 inches wide and with slanting instead of horizontal feeding surface..... 30.00

*Send us your problems, we may be in a position to help you and will cheerfully try.*

## EMMERT

Made by the Emmert Manufacturing Company, Incorporated. General offices, 225 West 57th Street, New York City. Sold by specially appointed dealers and agents.



An automatic device that measures, moistens, ejects and cuts off any width of tape. It is controlled by an operating lever which when pressed down, causes a uniform length of tape to be driven over the brass moistening roller, which evenly distributes the moisture. The return stroke automatically cuts off the tape. Its construction is entirely of brass.

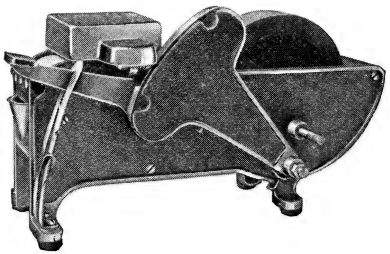
### Models and Prices

Model No. 3 finished in a bright nickel.....$25.00

## NATIONAL

Made by the Nashua Gummed & Coated Paper Company, Nashua, New Hampshire. Sold by directly appointed and controlled representatives.

The National Package Sealer is a device that measures, moistens, ejects and cuts off any width tape from ¾ to 1½ inches. All operations are automatic and positive in action.



It is controlled by an operating lever, which when pressed downward causes a uniform length of the tape, as predetermined by adjustable stops to be driven over the moistening roller.

The return stroke of the lever automatically cuts off the tape.

### Models and Prices

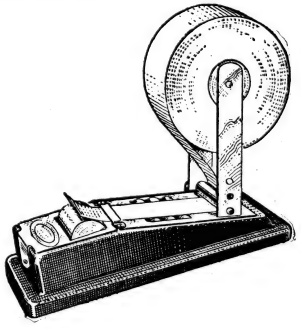
Model No. 206, finished in bright nickel with non-corrosive water tank and moistener (Superseded Model No. 205 in January, 1923)..$25.00

*New conditions of tomorrow in your business, will find you prepared if you study the DIGEST.*

## PARSUL AND RYCO SEALING MACHINES

Made by J. F. Ryan & Company, 375 Lexington Ave., New York City. Sold through stationers and dealers.

The Parsul sealing machine is a simple device for moistening gummed tape. The tape is carried in a hanger above the machine and is fed over rollers which rotate in a water reservoir.



### Models and Prices

Parsul sealing machine taking standard size rolls up to 1½ inches wide.....$2.50
Ryco tape moistener, shipping room size, taking standard size rolls up to 3 inches wide .....$5.00

## STAR

Made by the Metal Specialties Manufacturing Co., 338 N. Kedzie Ave., Chicago, Ill.

The Star line of machines are package sealers of simple design, their principal feature being that they hold tape wound with the gummed side in or out. The tape, when the machine is not being operated, lies on a dry roller ready for putting over the moistening roller.

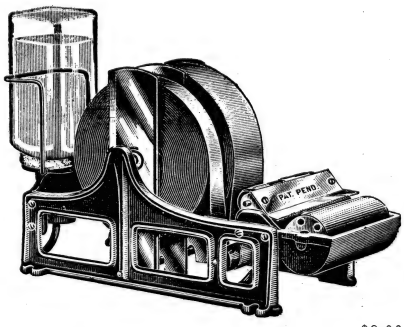
### Models and Prices

Model No. 2 handling tape up to 4 inches in width.....$7.50
Model No. 5 handling tape up to 3 inches in width..... 5.00
Model No. 7 handling tape up to 2 inches in width..... 4.00

## VAN GUARD

Made by the V. J. Van Horn Company 222 N. Union Ave., Chicago, Ill. Sold through dealers and agents.

The Van Guard fountain sealing machine differs from the many other simple machines of its type in that it has a large glass reservoir holding enough water to moisten 5000 feet of tape, without refilling. It automatically delivers the water to the feeder cup as it is needed. It is built for heavy duty, handling tapes from ½ inch to 4½ inches in width or two rolls totalling 4½ inches. A cutting knife is provided.




### Models and Prices

Model No. 3 Fountain Sealer as above described.....$8.00
Model No. 2, Fountain Sealer, handles tape up to 1¼ inches wide, smaller reservoir .....$4.50

# Telephone Attachments

## BATES ROTARY INDEX

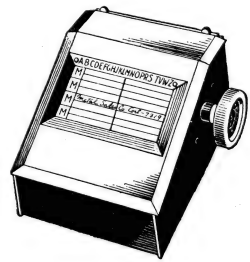
Made by the Bates Manufacturing Company. Factory, Orange, New Jersey. Sold through stationers and office equipment dealers.

A device for listing telephone numbers, ledger codes, price lists and other data in alphabetical order for quick reference.

It consists of a small cabinet in which is mounted an index strip ten feet long provided with spaces in alphabetical divisions for 750 names and addresses.

It is operated by a knob and may be turned in either direction. The entire length of the index strip may be turned from one end to the other in 1¼ seconds.

The machine measures 4 inches long by 3 inches wide by 3 inches high.



### Finishes and Prices

Bronze Finish ..... $2.50
Silver Finish ..... 3.50
Gold Finish ..... 5.00

## HUSH-A-PHONE

Made by the Hush-A-Phone Corporation, 19 Madison Avenue, New York City. Sold through specially appointed agents and dealers.

A telephone attachment designed to confine the voice, when telephoning, so that it cannot be overheard by persons in the same room. It affords privacy to the person using the phone and induces clearer transmission.



Its construction comprises an aluminum sound box, designed to slip on and off the mouth piece of any telephone, having a curved mouth piece to enclose the lips and maintain close proximity to the transmitter. Flared inner walls convey excess sound waves to two absorption units, the design of which absorbs all sounds in excess of that necessary for clear transmission. For sanitary purposes these absorption units are removable and renewable.

One model only, aluminum in black enamel finish ..... $10.00

**National Sign Stencil Company**
**1602 University Ave., St. Paul, Minn.**
Show Card Writing Devices and Sign Stenciling Outfits

## U. S. A. PHONE

Made by the National Phone Company, Incorporated, 47 West 42nd Street, New York City. Sold direct and through specially appointed dealers and agents.

The purpose of the U. S. A. Phone is to direct and amplify the receiving of telephone conversations. It is constructed on the principle of a doctor's stethoscope, confining and directing through tubes to both ears all sounds emanating from the receiver and shutting out all outside noises. It is not an attachment.



NOT AN ATTACHMENT

The receiver is lifted off the hook and placed on a base containing an adjustable sound chamber that may be tuned to the quality and strength of different incoming voices. Ear pieces connected through rubber tubing with this base are self adjusting, leaving both hands free while telephoning.

### Models and Prices

Made in one model only.....$5.00

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(Continued from page 352)

## STENOTYPE—continued

operation is somewhat similar to the Shortwriter, described in the catalog section, except that its means of coding is different. Impressions are made through a ribbon. Operation is noiseless.

Two models were made, both very light in weight and fitted in cases to be carried to the work. The Master Model, also known as Model No. 3, weighing but 4¼ pounds, used paper folded in zigzag formation and stored in a magazine at the rear of the machine, and wrote numerals expressed in figures, whereas previous models used code for numerals. The larger model uses roll paper.

Both models were sold principally through schools and business colleges and direct by mail. A course of instruction requiring a study of from three to six months, (as is necessary in acquiring efficiency in hand written shorthand), was also sold with the machine. The last selling price was $73.50, including the course of instruction.

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*The DIGEST starts where advertisements end.*

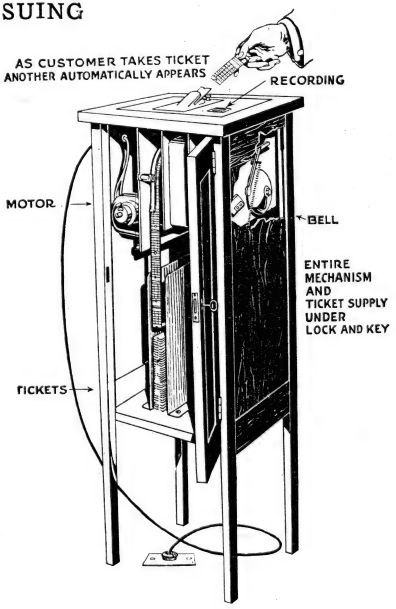
# Ticket Issuing Machines

## AUTOMATIC TICKET ISSUING MACHINE

Made by the Automatic Ticket Register Corporation, 723 Seventh Avenue, New York City. Sold through branch offices and dealers throughout the world.

Delivers a standard restaurant check, registers the number, rings a bell and leaves a check in the slot for the next customer. It is motor operated, fully automatic.

Pre-printed and pre-numbered checks are carried, folded in a hopper in the machine, from which they are fed as required through a slot in the top and held at a convenient angle for removal by the patron. A slight pull is required to remove the check, the operation of removal automatically cutting it off and setting in motion the mechanism to immediately present the next check.



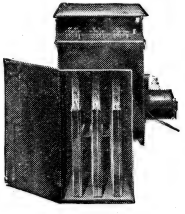

### Models and Prices

Made in one model only. $170.00
Wood cabinet (for enclosing) extra ..... 30.00

## AUTOMATIC TICKET REGISTER

Made by the Automatic Ticket Register Corporation, 723 Seventh Avenue, New York City. Sold through branch offices and dealers throughout the world.

A device for use in theatres, etc., for speedily and automatically issuing and accounting for tickets as they are sold.



Pre-printed and pre-numbered tickets are furnished wound in reels. The different models will accommodate up to five reels (of different denominations, if required).

Usually the device is set in the counter of the ticket booth. It is operated from a keyboard of five keys for each reel. When the operator depresses the key corresponding to the number of tickets desired, the motor is thrown into operation, ejecting a strip of the required number of tickets through a metal trap door in the top (which is flush with and serves

## AUTOMATIC TICKET REGISTER—continued

as part of the counter top). The strip is cut off and held at a convenient angle for removal by the patron.

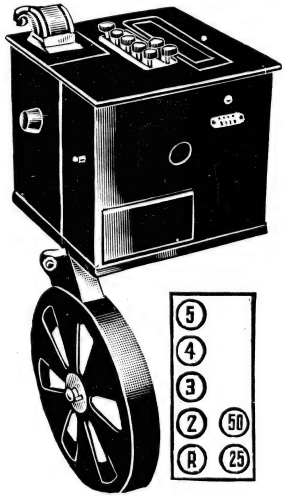
Adding counters provide a daily total of sales of tickets of each price. Locks provide against seeing of totals or removal of tickets by unauthorized persons.

### Models and Prices

Type 502 Daily accounting machine, for 2 different price tickets....$250.00
Type 503 Daily accounting machine, for 3 different price tickets.... 325.00
Type 504 Daily accounting machine, for 4 different price tickets.... 400.00
Type 505 Daily accounting machine, for 5 different price tickets.... 450.00

## NATIONAL

Made by National Cash Register Company, Dayton, Ohio. Sold through their own agencies in all principal cities.




Key-set, crank (hand or electric) operated. Designed for use on a stand. Issues, cuts off and delivers plain or stub tickets of from 1 to 5 denominations in lots of one to five. Prints denomination (from electros), date, consecutive number and front and back advertisement of user on each ticket issued. Tickets are delivered in a chute designed for their easy removal by the customer. Equipped with or without total adding counters. All models have tally counters recording number of tickets of each denomination issued. Number (quantity) of tickets to be issued are denoted on left bank of keyboard, and denomination on right. Only one denomination of ticket can be issued at one time, (the set-up for the second denomination cannot be made until the issuing of the first denomination is completed). Release keys restore all keys to correct error in set-up. Finish: black enamel.

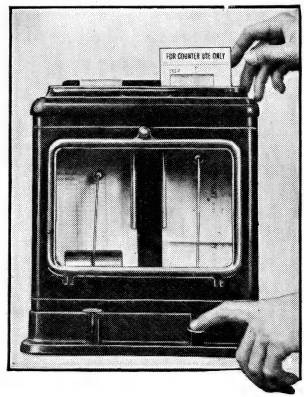
### Models, Descriptions and Prices

| Model | Kind of Ticket | Denominations | Ticket Counters | Total Counter | Price Hand | Price Electric |
|---|---|---|---|---|---|---|
| 1201 | Plain | 1, (5c) | one | without | $150.00 | $200.00 |
| 1206 | Stub | 1, (5c) | one | without | 150.00 | 200.00 |
| 1202 | Plain | 2, (5c, 10c) | two | with | 165.00 | 215.00 |
| 1207 | Stub | 2, (5c, 10c) | two | with | 165.00 | 215.00 |
| 1203 | Plain | 3, (5c, 10c, 20c) | three | without | 180.00 | 230.00 |
| 1208 | Stub | 3, (5c, 10c, 20c) | three | without | 180.00 | 230.00 |
| 1205 | Plain | 5, (5c, 10c, 15c, 20c, 25c) | five | without | 210.00 | 260.00 |
| 1210 | Stub | 5, (5c, 10c, 15c, 20c, 25c) | five | without | 210.00 | 260.00 |
| 1211 | Plain | 5, (5c, 10c, 15c, 20c, 25c) | five | with | 235.00 | 285.00 |
| 1214 | Stub | 5, (5c, 10c, 15c, 20c, 25c) | five | with | 235.00 | 285.00 |
| 1222 | Plain | 2, (5c, 10c) (double issuing) | two | with | 215.00 | 265.00 |
| 1227 | Stub | 2, (5c, 10c) (double issuing) | two | with | 215.00 | 265.00 |
| 1262 | Plain | 2, (5c, 10c) (double issuing) | two | with | 240.00 | 290.00 |
| 1267 | Stub | 2, (5c, 10c) (double issuing) | two | with | 240.00 | 290.00 |

## ECONOMY COUNTER CHECK & DEPOSIT SLIP DISPENSER

Made by the Bar-Trex Manufacturing Company, Incorporated, P. O. Box 1589, Birmingham, Alabama.

A cabinet for use in banks from which are dispensed counter checks and deposit slips, one at a time, as needed. Also used in hotels and other public places for dispensing writing paper and other forms. A glass panel in the front of the cabinet affords visibility of the contents. A pressure of a lever located at the base, ejects a single form through an opening in the top. The device is not a vending machine and no coins have to be inserted to secure a form.




The advantage principally emphasized is the saving, by elimination of waste, in the use of such forms as it dispenses. It also serves to keep the supply of forms clean and in order.

It is adjustable to a wide range of form sizes and is sold with or without calendar attachment at the top.

### Models and Prices

| | |
|---|---|
| Mahogany finish | $37.50 |
| Black enamel or gold striped finish | 35.50 |
| Calendar feature, extra | 5.00 |

Discounts are allowed, and vary for the purchase of machines in quantities up to 25.

## AUTOMATIC RECEIVING TELLER

Made by the American Banking Machine Corporation, Saginaw, Michigan. Distributed through banks on a sale or lease basis.

A coin vending machine issuing stamps in connection with a savings system conducted by neighborhood banks. The machine comprises a cabinet having several compartments, in which stamps of different denominations are stored. Each compartment has an aperture through which the kind of denomination may be seen.

When a coin is inserted, a stamp is released. Cards on which stamps may be pasted are supplied by the bank. The bank collects periodically the amount deposited in the machines and as cards are presented, credits the individual on a savings account pass book with the amount represented by the stamps.

The usual procedure is to distribute the devices to schools, hotel and apartment house lobbies, etc., providing a convenient means of accumulating savings by frequent small installments.

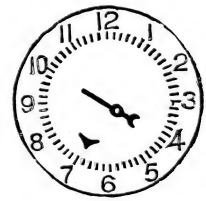
# Time Recording Devices

In describing the different styles of time recording equipment, the style imprint is referred to as a one-line imprint or as a clock dial imprint.

A one-line imprint combines in a single, horizontal line such information as hour and minute, A.M. or P.M., month, date and year.

JUN 21 1919 9 51 AM

The clock dial imprint shows the recorded time by means of two hands or other symbols which revolve inside a dial, arranged like the dial of a clock, and appear similar to the illustration herewith.



Both styles of imprints are sometimes combined with a die plate to print the name of the user or name of an individual, department, or other data at the same time and in connection with the imprint.

## Classifications of Time Recording Equipment

Time Recording devices are either spring driven (hand wound) having a controlling mechanism self contained, or are electrically driven.

Electrically operated devices are controlled from a master clock, located at a central point, usually in the office of the establishment in which the recording equipment is used. Impulses are sent, usually at one minute intervals, through wires from the master clock to each recording unit connected. A single master clock will control any number of recording units. The outstanding advantage of electrically operated equipment is that the time recorded is synchronized on each and every device throughout the establishment, all agreeing identically in time with the master clock.

The descriptions of time recording equipment contained herein comprises:

### Recording Time Locks

Designed to be attached to the doors of stores, offices or other establishments to protect the owner against loss of time by preventing late openings, too early closing and to record unauthorized re-entries of the establishment after business hours. They are equipped to furnish and preserve in a locked compartment, accessible only to the owner, dependable records over a period, usually one week, of each opening and closing of the lock. Some locks are equipped, in addition, to show the identity of the employee opening or closing the lock, and the nature of the operation, whether the bolt was open or closed.

Such locks have been available on a lease basis in the larger cities for many years, in connection with which the manufacturers have established a maintenance service, which includes the removal of the lock records at weekly intervals, and the furnishing of a report to the lessee, covering irregularities in openings and closings.

While this service is still maintained, the locks are also now sold outright. In the smaller cities, where a maintenance service cannot be profitably undertaken, and in cases where it is necessary for the employee to open the lock to remove his own records and forward them to his employer, means have been provided so that an absolute tamper-proof check

## TIME RECORDING DEVICES—continued

can be made which, if altered by the employee, reacts adversely to his record.

Full descriptions of each lock, their method of making records and their safeguarding features are shown in detail for each make.

### Time Stamps

Comprise electrical or spring driven (hand wound) clock mechanisms for recording the time of receipt or other condition on letters, legal papers, etc.

### Employees' Time Recorders

For recording the in and out time of employees. There are three different types and many models of each type of employees time recorders.

Card recorders are designed for the imprinting of time on individual cards for each employee. They are usually equipped with automatic or manually operated adjustments so as to print in definite columns or other places on the card for different days of the week or different time periods of each day, such as starting time, stopping time for lunch, starting time after lunch, quitting time and overtime.

Many devices are incorporated in the different models of the different makes to prevent falsifying the records provided and to denote by a distinctive color of printing such registrations as late arrivals, overtime, etc.

Card recorders seem to be rapidly superseding other types of employees time recorders because they are more flexible and permit of the use of the same instrument for registration of the time of any number of employees.

Key or punch operated types, also known as dial recorders, make records of all employees time on one sheet contained within the machine. They are limited in their registrations to a definite number of employees.

Autographic time recorders provide for the employee signing his name on a record contained within the machine, thus, positively identifying the employee making the record.

All types of employees time recorders are made in electric and spring driven (hand wound) models.

### Job Time Recorders

Also known as cost recorders, differ widely in their functions and operation. Some eliminate such periods as lunch or supper hour, etc. Others start each day, or each day period, at a zero hour, and progressively record hours and minutes throughout such periods regardless of the standard time.

### Elapsed Time Recorders

Automatically compute the net number of hours and minutes from the imprinting of the starting and stopping time on each job, with lunch, supper and other non-working periods eliminated.

### Program Devices

Mechanisms built into the master clock function at definite times, in accordance with any time schedule, to operate gongs, whistles, horns and other signals, simultaneously throughout an entire establishment to announce noon quitting time, afternoon starting time, etc. They may be adjusted to omit the signals on certain days or parts of days, as desired.

### Kinds of Records

All devices are built to imprint the time records expressed in hours and minutes. The most popular method, however, is to print the hour in tenths or hundredths which facilitates and enhances the correctness of figuring of elapsed time.

## AJAX TIME STAMP

Made by the Boston Time Stamp Company, Inc., 136 Washington Street, Boston, Mass. Sold direct and through specially appointed agencies.

The Ajax Time Stamp differs from other devices of its kind in that the clock movement is separate from the time printing mechanism—a light shaft being the only connection.



This design is intended to prevent the jar of stamping from affecting the accuracy of the clock. The recorded time is shown by hour and minute hands on a clock dial design.

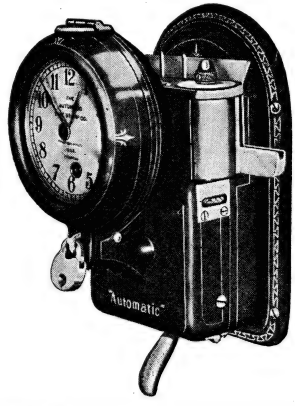
The machine is all metal. Date wheels and die are engraved on brass. It prints through a ribbon having an automatic feed.

### Models and Prices

Made in one model only.....$40.00

## AUTOMATIC TIME REGISTERS

Made by The Automatic Time Stamp Company, 160 Congress Street, Boston, Massachusetts. Sold direct and through specially appointed agencies.




A wall type register of compact all metal construction designed for recording time of arrival or departure of employees, and the starting and finishing of job work. Makes clock dial style of impressions. Provided with holder and guides for insertion of time cards.

### Models and Prices

Model D.....$75.00
Holder frames for displaying 25 employees cards ..... 7.50

## DAYTON TIME LOCK

Made by the Recording Devices Company, successors to the Dayton Adding Machine and Time Lock Company, Dayton, Ohio.

A lock, containing a clock to record the exact time at which any key is turned in the lock.

Each lock is furnished with six keys, differing slightly in design, and of special pattern, furnished only by the factory. Each key of each set has its own distinguishing characteristic to identify its possessor by recording its identity on the tape at each operation of the lock. The

## DAYTON TIME LOCK—continued

recording mechanism is accessible only to the owner, who is supplied with a special key for that purpose to provide access to the record of lockings and unlockings of the door.

The imprint is made in a clock dial design on a continuous paper tape. The operation of the lock does not interfere with any other lock or latch on the door. The bolt cannot be thrown except with its own particular key.

The bolt is of the dead-lock type, made from one solid piece of hardened steel ½ x 1½ inches, which penetrates the door jamb to a depth of ¾ inch.

Price, outright sale ..... $75.00
Rental, on service maintenance basis, per month..... 3.00

## AUTOMATIC TIME STAMP

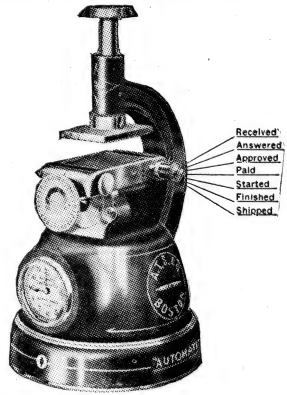
Made by The Automatic Time Stamp Company, 160 Congress Street, Boston, Mass. Sold direct and through specially appointed agencies.

The several different models follow the same basic principle of appearance and operation, differing in their attachments, improvements and adaptions for special kinds of work.

The Automatic line of time stamps has been on the market since 1880, the makers claim to be the originators of the art of printing time automatically.

The clock dial style of imprint is made by all models.

The designations "AM" and "PM" are automatically changed. The date and other special characters mounted on the revolving word cylinder, such as "Received", "Answered", "Started", "Finished", are changed manually. The die is engraved on brass and may have included special inscriptions such as firm names, department designations, etc.




### Models and Prices

(All models are ribbon printers. Price includes engraving of original die.)

| Model | Description | List Price |
|---|---|---|
| 1 | Original model, without face clock | $45.00 |
| 2 | Dust proof model with clock on face | 52.00 |
| 3 | Noiseless, press lever operated. Prints on upper side of paper. Automatic ribbon feed. May be arranged to print seconds as well as hours, minutes and data. | Discontinued |
| 5 | Prints time, date, and consecutive number, adjustable also for duplicate, triplicate and repeat numbers | 90.00 |
| 7 | Same as No. 2 with locked reset for time and date | 60.00 |
| 8 | Same as No. 2 with 8-day clock | 75.00 |
| | Extra for metal case to enclose and lock No. 2 | 8.00 |
| | Extra for lock device on time reset only, on No. 1 and No. 2 | 3.00 |

## CINCINNATI

Made by the Cincinnati Time Recorder Company, 1733 Central Avenue, Cincinnati, Ohio. Sold by their own sales force through branches and agents in principal cities.

The Cincinnati line of time recording instruments comprises models and types for every need. They are made in both electrically operated and spring-driven models. Spring driven models have their mechanism self-contained and are hand wound. Electrically operated models are synchronized and have their type wheels changed each minute by electric impulses from a master clock located at a central point in each establishment.

### Employees' Time Recorders

Made in daily, weekly, bi-weekly and semi-monthly models of both inserted card types and autographic types. Recorders operated on the key and tape principle are also manufactured.

### Card Recorders

On card recorders the shift device to position the printing point on the card from day to day is automatic; a cam mechanism making one revolution every twenty-four hours moves an abutment which holds the card, raising it one space each day, and a second movement shifts the card automatically from the "in" to "out" and "out" to "in" periods.

Records of the time, expressed in hours and minutes or hours and decimal fractions of an hour, are made in either horizontal or vertical columns on the cards. Different models are made to take care of any number of registrations, thus allowing an employee to come in and go out as many times as desired, and in addition, will take care of two, three or more shifts throughout a period of twenty-four hours. One employee can go out while another comes in. The registrations are all placed in the proper position and in the proper column on each card.

Irregular registrations, such as late arrivals and early departures, are shown in a distinctive color from all other imprints on a card. Overtime and other irregular registrations are similarly shown.

To prevent fraud by the employees through the use of carbon paper matching the "on time" or irregular registrations, these devices imprint a star opposite each irregular registration and in a distinctive color.

**Autograph Recorders** require the employee to write his name while registering, the record appearing on a roll of paper contained inside the machine. As the name is written, the time is recorded opposite each name, giving the time each employee arrives, or departs.

**Key Operated Tape Recorders** provide records of all employees on a narrow strip of paper. Each key is engraved with the number of the employee. There is no limit to the capacity of these machines, but they are recommended usually to concerns having less than 100 employees.

An advantage of this type of device is that the morning "in" registrations are all together, and the "lates" are all together, as are the registrations for noon "out" and "in," and all overtime.

### Cost Recorders

Are designed to register the starting and stopping time of various jobs for the keeping of costs in factories, etc. They can be supplied to print the date of the month and in some instances, the year or symbol block to designate on what recorder the registrations were made.

Models are also supplied with a special engraved wheel designed to have the clock start in the morning at zero in order that the number of hours from that point that day would be the number of hours worked. It also

## CINCINNATI—continued

automatically eliminates the noon and other non-working periods. Cost recorders are also built in units designed to be placed on a work bench throughout an establishment.

**Time Clocks**

An extensive line of time clocks are also made by this company to operate automatically by electrical control from a master clock located at a central point.

Program instruments, watchmen's clocks, and other time recording devices are also manufactured.

## TIMEOMETER

A device formerly manufactured by the Automatic Time Stamp Company, Boston, Massachusetts, but now discontinued. It was designed to compute, mechanically, in hours, minutes and seconds, and provide a printed record of elapsed time of long distance telephone calls and time study problems.

## CALCULAGRAPH

Made by the Calculagraph Company, 30 Church Street, New York City.

The Calculagraph is a time meter or elapsed time recorder which prints the starting time of a job in hours or minutes, or tenths of an hour, and when the finishing time is recorded, the exact elapsed time is imprinted on the time card, with non-working periods such as lunch or dinner hours eliminated.



One Calculagraph will compute and print the elapsed time for any number of workmen engaged in any number of jobs, irrespective of the order of starting and ending times.

It consists of a cylinder, standing on its end, containing a clock mechanism. There are two levers operated by the right and left hands. When a job is started, a card is inserted in the slot of the machine face downward and the right handle pushed forward, printing the date and time of day. An arrow in the dial indicates the minutes and a wedge shows the hour.

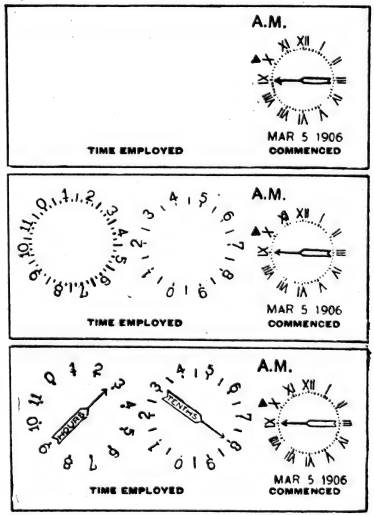
Without removing the card from the slot, the right hand lever is then operated backward, imprinting the two elapsed time dials but without showing the arrows.

The card is then filed in a rack or retained by the workman and records for other jobs started in the same manner.

The principle of operation is that the printing dies which record the elapsed time are in two parts, one carrying the two circles of figures having division marks for hours and fractions of an hour, and the other carrying the arrows.

## CALCULAGRAPH—continued

The two parts of these printing dies are secured rotatively by a dowel pin, so that the arrows actually always point to zero on the elapsed time dials. The dials and the arrows rotate constantly throughout the day. The two parts of the dies, however, have a vertical movement independent of each other. At the beginning of a job, that part of the dial bearing the characters and division marks is raised to imprint the characters only without the arrows, thus establishing a definite position for the characters on the time card, which position is that in which the dial is at in its rotation at that particular time. During the time that a job is in progress the dial continues to rotate. When a job is finished, the card again inserted in the slot and the left handle pulled, that section of the die containing the arrows only, is raised to be printed, thus completing the elapsed time record in the dials. The position of the arrows when imprinted denotes the length of time elapsed since the impression of the character section of the dial was made.




The Three Stages in Making a Complete Record On One Card.

It will be obvious since both parts of the printing dies have been revolving during the intervals between the two printings, and since the card on which the record has been made has not revolved, but is put into the machine against guides in exactly the same position on both occasions, that the completed record on the card will show that the arrows have moved forward in their rotation, while the dial imprint having been made previously, does not appear to have rotated. In other words, the arrows will not point in the printed record, toward the zero mark where they really stand in the die, but will point toward the figures or division marks representing the arc in their rotation during the interval of elapsed time or working period.

The operation permits regulation on each record card of a new zero or starting point automatically for a new record for each man, or each job, or for any number of men or any number of jobs, and when the arrows are printed on that card, when the workman or job is stopped, the completed record will be a true measure of the elapsed time.

Each unit is complete in itself, having a self-contained, spring-driven, eight-day clock movement, encased in a metal, dust-proof case, measuring 8½ inches in diameter and 5½ inches high; weight, 16 pounds. The imprint is made from type through a ribbon. The types do not jump from one point to another, but move continuously from the movement of the clock. The imprint made from the lever is always uniform. Setting the

## CALCULAGRAPH—continued

hands on the clock face, either backward or forward, has no effect on the elapsed time mechanism, thus preventing the making of false records. Any form or style of card may be used.

Elapsed time records are made in as small a division of time as fifteen seconds. The device is especially adapted for timing telephone calls and for providing elapsed time records in factory operations.

### Models and Prices

Model 9-X, Calculates and prints elapsed time in hours and minutes, records time of day, day of month and year.....$125.00

Model 15-X, Calculates and prints elapsed time in hours and tenths of an hour and records time of day, day of month, and year..... 125.00

When equipped with brake device for stopping the clock during non-working periods, an additional charge of $5.00 is made for either of the above models.

When equipped with clutch cut-out, a device for disconnecting the elapsed time dials to eliminate the elapsed time of non-working periods, an additional charge of $10.00 is made for either of the above models.

Model 16X, Calculates and prints elapsed time for a maximum record of 24 hours and records the time of day, day of month, and year; equipped with brake device ..... 145.00

Model 17-X, Same as Model 16-X, except that it calculates and prints elapsed time for a maximum record of 60 hours and is equipped with clutch cut-out ..... 150.00

Model 18-X, Calculates and prints elapsed time for a maximum record of 15 hours and records time of day and date; equipped with clutch cut-out ..... 140.00

Pedestal, adjustable from 26 to 40 inches in height from floor to ticket plate, extra ..... 10.00

## FOLLETT TIME STAMP

Made by the Follett Time Recording Company, 9-11 West Broadway, New York City.

A device for printing and recording, automatically, the year, month, day, hour or minute, A. M. or P. M., at the exact time the plunger is pressed. The clock movement is contained in the base and is entirely separate from the printing mechanism. The base measures 7 x 7¾ x 11½ inches; weight, 15 pounds.

Time is printed in a straight line and, if desired, a die may be supplied to imprint simultaneously, the name of the firm and address, together with as many as six different words, such as "Received", "Paid", "Answered", "Recorded", etc., or any other words suitable to the user. Any word may be printed at will by turning the adjustable cylinder on which they are engraved.

The printing wheels, letters and figures are made of solid metal and are locked against setting, except to the authorized person having the key.

The construction provides for the month and meridian wheels to be turned by a special motor instead of by the clock movement. The clock movement merely releases the wheels at correct intervals and is thus relieved of any driving strain.

All models may be equipped with gauges to imprint in uniform positions on time cards, etc., thus serving also as employees' time recorders. These gauges comprise a gear rack, having teeth for setting a stop in as many as twenty-four positions, to accurately gauge the in and out time, two periods, six days in a week.

### Models and Prices

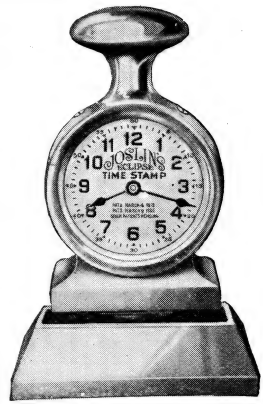
Regular Model .....$50.00

Special Model, with employes' time card gauge..... 60.00

## ECLIPSE TIME STAMP

Made by the A. D. Joslin Manufacturing Company, 223 West Erie Street, Chicago, Illinois. Sold by stationers and distributors.

A clock and mechanism contained in a frame similar to a hand rubber stamp to imprint a clock design impression showing the hour and minute on letters, time cards and other records. It prints the date and exact time and any additional data required, such as, the user's name, department, or the words "Received," "Paid," etc.




The die is of rubber. The date characters are individual, removable rubber type. The characters, corresponding to the hour and minute hands of a clock, rotate inside of and point to the characters on a clock dial design, to indicate the exact hour and minute the impression was made.

The ink supply is furnished from a felt ink pad, contained in a base which forms a pedestal for the device when not in use. The operation is the same as any ordinary rubber stamp.

Any form of imprint surrounding the time dial imprint, or any form of the dial itself, are supplied to suit the needs of individual users. Dials, divided into tenths of hours for shopwork, etc., can also be supplied.

### Models and Prices

Model C, hand set.....$15.00

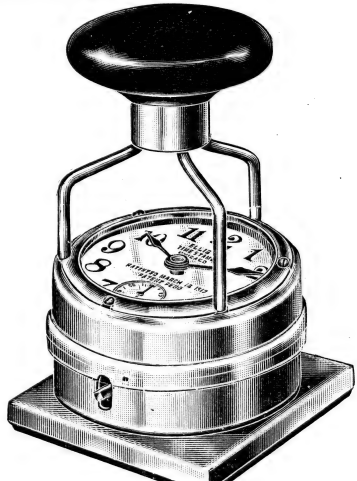
Model D, key set. Instead of the hands being movable and set by the usual stem at the back of the clock, the characters are set by a key which is retained by the department supervisor or factory foreman, thus, when the stamp is used as a check upon employees' time, or upon the time of their performance of work, the mechanism cannot be manipulated by them .....$17.50

*All data in this DIGEST has been compiled after much research, investigation and study. You will benefit by studying its pages.*

## ELLIS TIME STAMP

Made by the Ellis Time Stamp Company, 859 North Franklin Street, Chicago, Illinois.

These stamps are made in two different models. The self-inking model is inked from a ribbon traveling across a solid rubber pad. The other model is inked from a regular rubber stamp pad. Both models record time by a clock dial imprint having hands revolving inside of a dial. If desired, the name or advertisement of the user, or distinctive wording, may be imprinted at the same time that the time record is made. The die plate is 1½" x 2¼", permitting almost any desired reading matter to be used. The dates are made of rubber and are interchangeable. The die for the time and distinctive imprint, are made of molded rubber.



### Models and Prices

Self-inking Model, price....$16.50
Pad-inked Model, price..... 15.00

## INTERNATIONAL TIME RECORDING DEVICES

Made by the International Time Recording Company, General offices, 50 Broad Street, New York City. Works, Endicott, New York, and Toronto, Ontario, Canada. Sold by their own centrally controlled sales force.

NOTE: The Dey Time Register Company, Endicott, New York, Syracuse Time Recording Company, New York City and Bundy Manufacturing Company, New York City, have been consolidated with the International Time Recording Company.

### Products and Their Uses

**Dial Recorders**

Furnish a complete payroll record printed on a time sheet in convenient form for reference and filing. Made in eighty-eight different styles and sizes to furnish either a daily or weekly record of any number of employees up to one hundred and fifty on one machine. Used in all lines of business and especially adaptable to banks, offices, retail stores, department stores, wholesale and jobbing houses, as well as factories.

Model shown in illustration is 6135, clock driven, fully automatic for up to 100 employees.

**Card Recorders**

Furnish a daily, weekly, two-weekly, semi-monthly, tri-monthly, quadri-monthly or monthly time record, printed on a separate card for each employee. Used in all kinds of business from the smallest to the largest.

Model shown in illustration is No. 1116, clock driven, fully automatic.

## INTERNATIONAL TIME RECORDING DEVICES —continued

**Autograph Recorders**

Print a record of arrivals and departures of employees on a roll of paper, permitting employees to sign their names alongside their printed time registrations.

Model shown in illustration is No. 3000, clock driven.

**Recording Lock Equipment**

Furnishes an accurate record of the time any door is locked or unlocked (day, hour and minute) telling WHO locked or unlocked it, and whether from the inside or the outside. All the records for all locks are made in one master recorder, which can be located in any part of the office or building. Built for use in retail stores, banks, offices, factories, stockrooms, storerooms, file rooms, vaults and other places where locked doors are necessary.

A single lock is shown in illustration.

**Watchman's Station Equipment**

Furnishes a complete, plainly printed record on one line, showing initial representing watchman, number of station from which he registered and time he registered—date, hour and minute. All the records are made in one master recorder, which can be located in any part of the office or building. Furnishes positive identification of the watchman making the rounds. Prevents the possibility of someone else taking his place and prevents watchman leaving office or building without knowledge of his superiors. Prices are dependent on number of stations and their locations, distances apart, etc.

**Time Stamps**

Accurately print the time of receipt and dispatch of mail, documents, orders, etc. Made in electric and clock driven models, two of which are illustrated.

**Electric Time Systems**

Electric Time Systems will operate and control any number of secondary (wall) clocks, time stamps, time recorders, job time recorders and program devices (to operate bells, whistles, gongs or other signal devices).

Master clocks, secondary clocks, program devices, charging devices, etc., are manufactured in many different styles and sizes to meet any requirements and specifications.

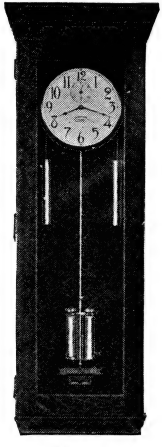
They operate on direct or alternating current, or batteries, and the various units may be placed anywhere without affecting the operation of the system.

**Program Devices**

Operate gongs, whistles, horns and other signals in accordance with any time schedule, the signals remaining silent on certain days or parts of days, if desired.

**Elapsed Time Recorder and Job Time Recorder**

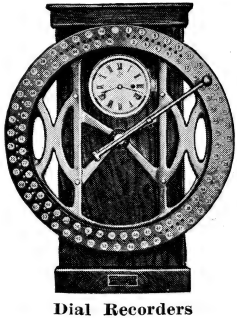
Automatically makes a printed record in figures, of the time spent on each job or operation, in hours and minutes, periods, hours and tenths or hundredths, together with the day of the week or the date of the month. Automatically eliminates non-working lunch hours, night hours or any other period. (Elapsed Time Recorder prints stopping time and computed elapsed time in one operation, eliminating mental calculations and reducing clerical labor and expense.) Furnishes the basis for accurate cost records. Provides a means for the checking and setting of piece work rates. Designed for use on the bench of day workers or piece workers, or may be operated by a shop clerk.



Master Clocks



Secondary Clocks



Dial Recorders



Recording Locks



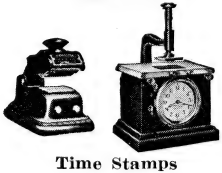
Watchman's Stations



Autograph Recorders



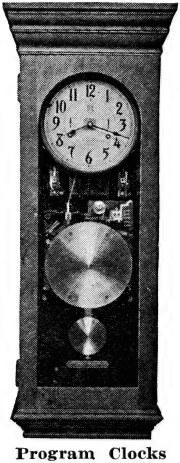
Card Recorders



Time Stamps



Elapsed Time Recorders



Program Clocks

Representative Products of International Time Recording Company

## PERIODOGRAPH

Made by the Gisholt Machine Company, Madison, Wisconsin. Sold direct and through specially appointed agents.

The Periodograph is a machine for recording the time that each employee spends on each job or class of work he has to do. It counts and records time in tenth-hour periods instead of hours and minutes and eliminates automatically all non-working time. It does not compute elapsed time.

A feature of its construction, is that it counts periods of working time continuously through the day, week or month that a shop or other establishment runs, so that the difference between the starting and stopping periods, represents the net working time, even though extending over several days. If a daily check of time and production records is desired, however, the device may be reset to start at zero each morning.

It is made in units, called registers, to be placed about the factory where most convenient and is controlled by a central clock located in the office. Each register contains a set of number printing wheels for stamping the date and the hour (called the period number) on a time ticket. At the end of each tenth-hour period, the controlling clock sends out an electrical impulse, which advances the printing wheels one unit. The printing wheels are set at zero at the beginning of the pay period or of each day as desired. From then on, they count time in periods during the hours the factory is working until the end of the day, or pay period.

All non-working time, such as noon, night or any other interval when the factory is not running, is automatically cut out by the controlling clock. When any or all departments are worked over time, the Periodograph shows distinctive records of such times without interfering with the accumulation of regular time during the day. The same equipment may be used for both day and night forces or three 8-hour shifts. Where women are employed, their time may be recorded according to a separate schedule, if desired.

The tickets used are drawn up to suit the particular needs of each establishment, and may be made to conform to any conditions under which the plant may be operated. The makers recommend one ticket for each operation on each lot of pieces, providing a complete record of the work done, the time taken and the labor cost on each operation.

Imprints are made starting from the bottom of the card and in a vertical column, one above the other, to the top.

The device will automatically position a ticket so as to permit several stops and starts on the same ticket, to show how often the job is interrupted. Each time an imprint is made on the ticket, a round hole is punched opposite the imprint. This hole positions the ticket for the next insertion, so that each registration after the first, must occur just above the previous one, making it impossible to stamp over a registration previously made. Two holes punched at the bottom of the ticket prevent its insertion wrong end first into the register.

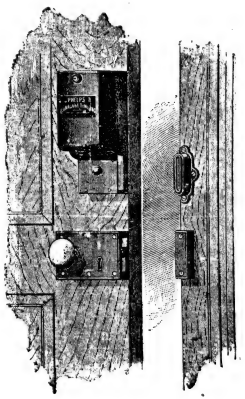
A means has been provided to secure an impression showing the same time on a new job as is recorded for the finishing time on the previous job. This device is called the "Automatic Delayer." It automatically locks the printing wheels for fifteen seconds after the first job ticket is stamped, to allow the operator to stamp the same period upon the second one. At the end of fifteen seconds, the printing wheels are again free to change and adjust themselves to the correct time period. Thus, the starting period of each job has the same stopping period of the job just finished, eliminating all unchargeable time during the day.

**Continued on page 389**

## PHELPS TIME LOCK

Made by the Phelps Guardant Time Lock Company, Incorporated. Executive offices and factory, 114-118 Liberty Street, New York City. Sold direct and leased on a maintenance service basis.

The latest product of this company, who were the originators of recording door locks (1894), is the Model C-100, which provides a record of each position of the lock bolt, whether locked or unlocked, each second of the hour, each hour of the day, for each day of the week and upon one dial.



The record is made upon a sensitized coated paper dial, 2⅞ inches in diameter, by means of a steel stylus which is in contact with the paper at all times, day and night, for the entire week, making one complete revolution in twenty-four hours and seven complete revolutions in one week, the seven revolutions being shown in the form of a spiral or involute curve. The base of the paper dial is purple covered with a white, removable surface coating, so that when the dial moves under the stylus, the coating is removed, and the purple line appears. Thus, an inking arrangement is not required.

The locked position is shown by a break outward in the curve, about 1/16 of an inch from the center, to a larger arc of the circle, and when the bolt is unlocked again another similar break is made inward in the curve, to a smaller arc of the circle.

If the lock should be thrown out and back instantly, it merely draws a straight line from the involute curve towards the center. If locked and left locked for two or three minutes and then unlocked, the action is shown by a "U" shaped mark on the curve.

The dials are made in two different styles. One is printed in the form of a chart having radial divisions for each ten minute intervals of the day and night.

A second style is a blank dial, from which records are read through a transparent key chart so that a clerk in an outlying city may insert and remove the record and forward it to his employer, merely writing on the face of the dial the time he takes the record off of the clock. If this time is not given honestly, the transparent key throws off time all his opening and closing operations for the week, because all time is computed from taking off time. A falsification of the records, therefore, works to his disadvantage.

In renting locks out of the city, the devices are numbered consecutively so that a check may be made to prevent their being wasted or experimented with.

When the lock is closed, the bolt is clamped to the door within two bronze plates as in a vise.

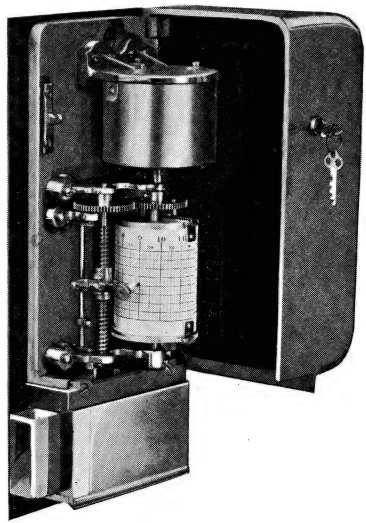
The mechanism is so constructed that the record does not "wedge" at the end of the full week. The dial is placed in position over a center post between two guide pins. The clock mechanism is self-contained, spring wound, and has a twelve-day, twelve-jewel movement. The case is waterproof.

### Models and Prices

Outright sale for complete lock, including 3 paracentric keys, escutcheon plate and screws, two lock keys and 110 sensitized dials.....$95.00
Extra dials in lots of 110 (for two years)..... 1.25

## SILENT WATCHMAN TIME RECORDING LOCK

Made by the Silent Watchman Corporation, 505 West 42d Street, New York City. Sold outright and leased on a service basis in the larger cities.



The Master Model is equipped with a clock movement, which drives a drum, bearing a chart, providing for records over a period of eight days. When the bolt is thrown into locking position, a stylus or pencil is brought in contact with the chart, making a distinctive mark thereon. During the period that the lock remains locked, the pencil draws a horizontal line on the chart as it rotates.

A feature of this lock is that it has a control over all the other locks on the door, making it impossible to lock the door by any other lock on the door until the recording lock has been locked. In like manner, it is impossible to make a record of opening on the recording lock until all other locks on the door have first been unlocked. This arrangement is designed to prevent an occurrence such as a store manager leaving the establishment for any period during the day and securing the door by one of the ordinary locks, or by unlocking the recording lock, but leaving the door locked by any of the ordinary locks, and not actually opening the establishment for business for some time thereafter.

The records provided show the day, hour, minute, A.M. or P.M. of the actual opening or closing of the door on which it is mounted.

### Models and Prices

The Long Bolt Master Model may be used on single doors, swinging either in or out and is arranged for operation on either side or both sides of the door.

The Short Bolt Master Model is used on double doors, swinging either in or out and is arranged for operation from either or both sides of the door, but is not equipped to control other locks on the door.

The Sliding Door Master Model may be used on elevator or other sliding doors and may be arranged for operation from either or both sides of the door.

The list price of all models is.....$100.00

When rented, on a service basis in principal cities, including the installation of the lock, changing the charts weekly and mailing a typewritten report of the record to the subscriber, per month.....$3.50

## STROMBERG

Made by the Stromberg Electric Company, Chicago, Illinois. Sold through their own sales force.

This company manufactures an extensive line of electrically operated time recording devices. All devices are controlled by a master clock, located at a central point, and impulses are sent once each minute to all of the recording units located throughout the establishment.

### Job Time Recorders

Designed for cost and production systems. They are separate registers located throughout an establishment, and will make an imprint of the exact time on any card, paper or work ticket. The one device may be used by any number of employees or shop clerks, to make a printed record of the time each job is started or finished. Imprints of time may be expressed in hours and minutes, or hours and decimal fractions of the hour.

In connection with the use of this machine, the manufacturers recommend a plan of numbering the working hours, called the Stromberg "Num-Hour" basis, to furnish records from which the time used can be calculated with maximum convenience.

When used on this basis, the dials automatically suspend operation during lunch, supper, or other non-working periods. They can be started and stopped to conform to any schedule of working hours, and if a change in the working schedule is made, the automatic operation of the recorders can be easily changed to conform to the new schedule.

Each recorder automatically starts at zero each morning at the regular time of starting work, whatever time that may be. An imprint of time, taken from the recorder at any moment, does not agree with the time of day, but indicates the number of standard working hours and fractions thereof which have elapsed since work began that morning. The difference between any two imprints shows the exact working time elapsed in standard hours and fractions thereof. A.M. and P.M. designations are eliminated.

After an entire working day has passed, including overtime and night work, if any, the printing mechanisms are automatically reset to zero, at which point they remain until they automatically begin operations again from that point, at the exact time the working hours begin the following morning.

Recorders can be furnished to record periods of any number of hours that may be necessary to conform to the total working hours that may be possible in each particular plant, or in different departments of the same plant, and may be equipped to operate on a weekly basis of working time instead of a daily basis, if desired.

All devices are equipped with abutments so that imprints are made in the correct spaces on the tickets at all times. Tickets are placed on the guide face upward. The abutment gauges the distance of the imprint from the margin of the ticket and an arrow points to a line upon which the imprint will be made. When used to record the starting and stopping time of each job, two separate abutments are furnished, making it necessary only to push the ticket against one abutment to bring it into the correct position to cause the starting time imprint to be made in its correct position, and against the other abutment to cause the stopping time imprint to be made in its correct position.

Impressions are made by a lever at the side of the machine. When this lever is pressed, a tripping movement takes place, which mechanically causes the imprint to be made on the ticket. Irrespective of the amount of

## STROMBERG—continued

power applied to the printing lever, the blow delivered to the type is always the same. The type is only in contact with the work ticket for an instant and holding the lever cannot keep the type in contact with the ticket or have any effect on the printing mechanism of the machine. When desired, these recorders may be equipped with electrical controls of the printing operations, electric buttons replacing the printing lever.

Each machine is equipped with a flexible electrical connection and can be moved about within reasonable limits.

When equipped to imprint time which conforms to the correct A.M. and P.M. time, they are equipped with an exposed clock dial from which time shown agrees with the time imprinted.

**Employees Time Recorders**

Used by employees to make records of the exact time of their arrivals and departures. Time is printed on individual cards that have sufficient spaces for a complete pay period. Besides the time of day, there are printed symbols designating the days of the week.

These devices are built to record time in four, six and eight columns, depending upon the length of pay period and the type of recorder desired.

Impressions are made by the operation of a printing lever on the side of the device. The change of time of the printing mechanism is made automatically by electric impulses from a master clock once each minute. When the printing lever is pressed, a tripping movement takes place, which mechanically causes an impression to be made from type on the employee's card. The type is in contact with the card only for an instant. Holding of the printing lever cannot keep the type in contact with the card or have any effect on the mechanism.

Cards are inserted down the guide at the front of the machine, right side up, face outward. Abutments may be set by hand or automatically, for the recording of a particular arrival or departure at the exact place on the card. Impressions are made through a ribbon which moves automatically each time an impression is taken.

Three models are made:

Model No. 8, in addition to printing records of the correct time of arrival and departure of employees, automatically indicates whether each employee was on time or otherwise, by printing such variation from the regular time in a separate position on the card. Each day's record is made in a vertical column, for any pay period either weekly, bi-weekly, or semi-monthly. As many as sixteen horizontal "in and out" imprints may be made on each card for each day's registration. The recorder automatically shifts from one space to another, passing through these sixteen spaces daily on any pre-determined schedule desired. Some of these spaces may be used for regular or on time arrivals and departures; others for irregular, tardy, early-out, overtime, or night shift registrations.

Model No. 7, like Model No. 8, prints the exact time of arrival and departure of employees, but shows all of the day's record in a single horizontal space and ordinarily provides only six positions for each day's registration. The guide, adjusting the position of the card for the registrations in "in and out" spaces, must be set manually. At the close of each day, the machine automatically sets itself to bring the cards for the next day into position to print the record in the space immediately below that of the preceding day.

Model No. 5 operates on the same principles as Model No. 7, except that the lift mechanism to set the position of each day's registration is operated by hand instead of automatically.

## STROMBERG—continued

**Automatic Time Stamps**

For stamping the time and date of receipt on letters, telegrams, etc. Like other Stromberg equipment, the type wheels in these stamps are changed automatically by electric impulses sent each minute from a master clock. They make a straight line imprint through a ribbon.

### Prices

All devices being electrically operated, are priced according to each individual installation, which is governed by the amount of labor and material used in the installation.

## SIMPLEX

Made by the Simplex Time Recording Company. Home office and factory, Gardner, Massachusetts. Successors to Time Recorder Department, Heywood Brothers & Wakefield Company of Gardner, Massachusetts and owners of W. H. Bundy Recording Company, Syracuse, New York. The time recording equipment formerly made by the W. H. Bundy Recording Company, is now manufactured by the Simplex Time Recording Company.

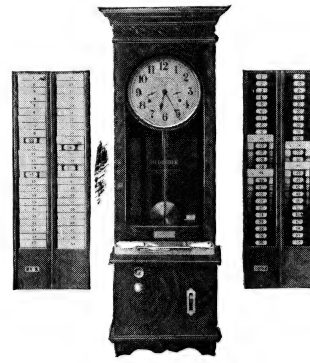
This company manufactures two types of employees' time recorders: Card Time recorders, for imprinting time on individual cards, and Sheet Recorders, for imprinting time of all employees on a single sheet within the machine.

**Payroll Card Time Recorders**

Are spring operated (hand wound), and have all mechanism self-contained. They print the day of the week or day of the month, as desired, in a distinctive color, also A.M. and P.M. designations and the hour and minute of each registration.

Records are printed in either vertical or horizontal columns as desired. The card is inserted in a chute and the record is made by pushing down a thumb piece or lever.

The card lift is raised, (on horizontal column printing models), or moved over one column, (on vertical column printing models), to position each day's registration in their proper columns. The action is automatic on some models, manually on others.

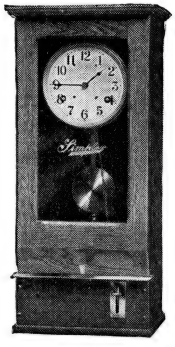


CARD MODEL

Late arrivals and early departures are printed in red; on time arrivals and on time departures are printed in blue. The hour numeral is underlined in the afternoon record to distinguish it from the morning record. During registration, type wheels are automatically locked making it impossible to make a false record. A card locking device makes it impossible to register if a card is not inserted in the receiver, right side front and all the way down. The standard size of card is 3½" by 8¾", although any size may be used.

## SIMPLEX—continued

### Cost Recorders



Are the same in general appearance as Payroll Time Recorders, except that they are designed for printing anywhere on any style of time, cost or job cards, and therefore, may be used to record the starting and stopping time of individual jobs as well as for payroll card recording. The card instead of being inserted in a chute, is placed on a shelf and moved to the proper position beneath a stationary indicator. As on the Payroll Card Time Recorders, the record is made by pushing down a thumb piece or lever.

The printing mechanism of both types of recorders is contained in the base of the clock cabinet. Impressions are made through a ribbon from engraved bronze type wheels. Imprints may be shown as hours and minutes, or as hours and decimal parts of hours, in 24-hour periods or 23-hour periods with noon hour eliminated.

### Models and Prices

| | |
|---|---|
| Model T, Cost Recorder, for imprinting anywhere on any style of time, cost or job cards | $ 90.00 |
| Model T, with special type wheels as desired | 100.00 |
| Model T, printing month as well as day | 160.00 |
| Simplex Model, semi-automatic time card recorder | 160.00 |
| Simplex Model, fully automatic time card recorder | 210.00 |
| Two-color feature, extra on any of the above models | 50.00 |
| Special Office Model, fully automatic | 235.00 |

### Sheet Recorders

Print the time of all employees on a single sheet within the machine. To register, the employee pushes a button located on a keyboard at the lower front of the machine, bearing his number, from an "out" to an "in" position when he arrives, and the same button from an "in" to an "out" position when he leaves. At any time the position of each employee's button shows who is present or who is absent. When a button is pressed it rings a bell and records the exact time by a perforation opposite the employee's number, on a time sheet which is fastened around a vertical cylinder revolving in unison with the clock. When one button is depressed, all other buttons are automatically locked, preventing two registrations being made simultaneously. All operations are fully automatic; there are no type wheels, ink or ribbons.

### Models and Prices

| Model | Push Button Type | Signal Button Type |
|---|---|---|
| No. 30—For registering time of 30 employees | $100.00 | $125.00 |
| No. 50—For registering time of 50 employees | 125.00 | 150.00 |
| No. 100—For registering time of 100 employees | 175.00 | 200.00 |

## THOMPSON TIME STAMP

Made by the Thompson Time Stamp Company, 106 Fulton Street, New York City.

Model A is a hand operated, percussion type of hand stamp, having all mechanism contained in the upper portion or stamping head. The clock movement is a Seth Thomas clock, entirely separated from the printing mechanism.

Date and month characters are mounted on wheels set from hand knobs at the side of the stamping head. In connection with the imprinting of the date and month and the A.M. and P.M. designations, these stamps are also supplied with a die to imprint the name and address of the firm, character of the transaction, etc. Impressions are made on the top of the paper. The date wheels are made of brass.

Price: with automatic change from A.M. to P.M.....$60.00
without automatic change from A.M. to P.M..... 55.00

Model B is also of the percussion type with the mechanism contained in the base, the impression being made by a plunger type of stamping head. All numbers are interchangeable and the printing parts, including date wheels, are made of brass. It prints through a ribbon. Price.....$50.00

Prices shown above include the engraving of any desired lettering around the brass dial, up to 35 characters.

Both models can be equipped with qualifying words such as "received", "answered", etc., to print in connection with the time. Logotypes for such words are carried on a revolving cylinder. Any number of words from one to seven, not exceeding twelve letters each, can be used. Price, per word .....$1.00

Both models above described imprint the time in a clock dial design.

Continued from page 382

## PERIODOGRAPH

### Models and Prices

The price of each complete equipment depends on the amount of wiring and other materials used, and labor required in installation.

Control Clocks, according to variations in style, range in price from .....$100.00 to $175.00

Recording Registers vary in price according to the size of card accommodated, from .....$100 to $150.00

The above prices do not include labor or materials used for installation.

*Advertisements in any medium are carefully worded to induce the buying urge. The descriptions you are now reading are to provide comparative knowledge—not to make up your mind for you.*

# Typewriter Attachments

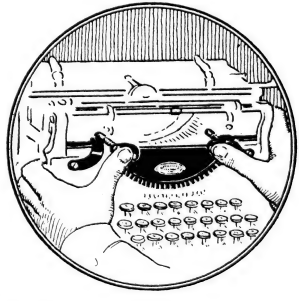
## INSTANTO TYPE CLEANER

Sold by the Instanto Sales Corporation, 27 East 22d street, New York City.

The Instanto Type Cleaner is a device for cleaning the typefaces of Remington, Underwood, L. C. Smith and Royal typewriters, with speed and cleanliness to the operator.

It consists of a brush, set in a metal back, shaped to conform to the arc formed by the type when they are at rest. A stamped steel frame which clamps to the frame of the typewriter, forms a housing for the brush when it is not in use.

To operate, the thumbs are pressed against both sides of the frame, causing the brush to pass over the surface of all the type at one time, cleaning all type in one quick motion. Releasing the pressure allows the brush to spring back out of the way .



### Models and Prices

Models are made for the above mentioned machines only.....$5.00
(Models for other makes of typewriters are being developed)

White Glass Slabs
for all purposes

*Cash Registers - Scales - Slicers - Refrigerators*
*Table and Counter Tops - Shelving - Wainscoting*
*Paneling - Ceilings - Partitions - Toilets*
*Bath Rooms - Hospitals - Restaurants*

Plain and with Etched Designs in Colors

Sanitary Construction Co.
355 UNION PARK COURT CHICAGO

# Typewriters

## TYPEWRITER HISTORY

So much has been published recently of the history of the typewriter, particularly of its development during the past fifty years, that it is easily within the reach of anybody who is interested in the story of that wonderful invention. This chapter is to trace particularly the origin of the more permanent features incorporated in present day typewriters.

**The first patent** on a machine, not called a typewriter, but evidently one from its description, was granted by Queen Anne to Henry Mills, an English engineer, on January 7th, 1714. It was never produced commercially.

**The first American patent** was issued on July 23rd, 1829, for a machine called the "Typographer," to William Austin Burt of Detroit, Mich., inventor of the Solar Compass. It was a combination of an index and typewheel machine, having the type on the segment of a circle, brought to position by an arm having a hole and pin locaters or gauges. It contained the elements of later typewheel machines. It was never manufactured.



The First Typewriter Made For Sale.
A Remington—1873

**The first typebar** appeared in 1833, when a patent was issued in France to Xavier Projan of Marseilles for a machine called a "Ktyographic." The typebars were arranged in a circle to strike down on a common point. The machine was never manufactured commercially.

**Longitudinal motion of the carriage for letter spacing** was first used in Charles Thurber's "Patent Printer" of 1843, developed in Worcester, Mass. It had an arrangement of keys with type on the bottom of stems arranged on a wheel rotated to the character desired and impressed on a platen. It was the first visible writing machine. Not commercially manufactured.

**The name "Typewriter"** was first applied to the first practical typewriter on which development was commenced in 1867 in Milwaukee, Wisconsin, by Carlos Glidden, Samuel W. Soule and Christopher Latham Sholes. Later they were joined in their work by James Densmore. The idea of the typewriter occurred during an experiment to produce a machine for numbering the pages of books, to accomplish the work of present-day numbering machines. The typewriter had an up-stroke, pivoted typebar, and was a shiftless machine (writing capital letters only), having the present-day principles of paper feeding around a platen and printing through a ribbon. Its manufacture was commenced in September, 1873, by E. Remington & Sons, Ilion, New York, and it sold for $125.00.

It is interesting to note that this, the first typewriter ever offered for sale, had the same four-row keyboard with the same arrangement of the letters as is now used on standard typewriting machines. It is not known why

the arrangement was selected. It might be thought that Mr. Sholes, being a printer by trade, selected an arrangement similar to a printer's type case. But a printer's case is not of similar arrangement. The most likely reason is that due to the construction of his machine, it was necessary to space the typebars for the different letters in positions to overcome interference as much as possible, as they passed each other.

**The first shift machine** (capitals and small letters), was the Remington No. 2, placed on the market in 1878. It is a direct descendant of the original machine.

**The first typewheel machine** was placed on the market in 1880 by the Hammond Typewriter Company.

**The first double keyboard** was brought out in 1883 on a machine called the Caligraph.

**The first visible writing typebar machine** was known as the Horton, brought out in 1883.

**The first automatic ribbon reverse** was placed on a Remington typewriter in 1896.

**The first front stroke** machine with typebars mounted in a segment in front of the machine was the Underwood, placed on the market in 1897.

**The first decimal tabulator** was the Gorin tabulator, placed on Remington typewriters in 1898.

## ANALYSIS OF TYPEWRITERS

In describing the features of the different makes of typewriters, an effort has been made to adhere to a standard form of analysis. It will be found that most of the machines conform in the sequence of the descriptions of their different features, to the following table. Thus in comparing one machine with others, the same features will be found in the same order, in each description.

1—General Features
- Model number.
- Date first put on market.
- Standard or portable.
- Typebar stroke, (front), down or thrust).
- Kind of shift, (basket or carriage).
- Visible or blind writing.

2—Keyboard
- Number of rows.
- Number of keys.
- Number of characters.
- Location of shift keys, (right or left).
- Shift lock, (position).
- Shift Lock release, (position).
- Feature keys on keyboard, (Back spacer key, Tabulator key, Marginal release key).
- Adjustable touch.

3—Carriage
- Kind of bearings.
- Interchangeable platen.
- Taking paper, (size).
- Writing line, (length).
- Design of escapement, (rack or rotary).
- Feed rollers, (single or unit).
- Tabulator design, built in or attached (number of keys).
- Line space lever (right or left).
- Adjustable line spacing, (number of positions).
- Back spacer.
- Margin locks, (right or left).
- Line indicator.
- Paper fingers.
- Variable line spacer.
- Lateral paper guide.

4—Printing Mechanism
- Construction of typebars, (corrugated).
- Mounting, (segment or individual hangers).
- Stroke stop.
- Adjustments or bearings.
- Adjustable impression.
- Type guide, (lateral, vertical),
- Heel to prevent battering.
- Ribbon, (colors).
- Size.
- Stencil cut-out,
- Automatic reverse.

5—Construction
- Base (open or enclosed).
- Noise-reducing features.
- Finish.
- Type faces.

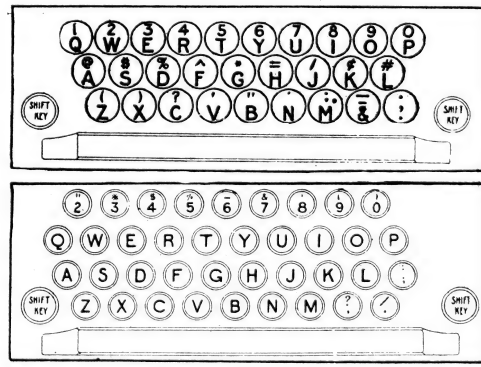
6—Price
- Carriage lengths.

## THE FOUR-ROW VS. THE THREE-ROW KEYBOARD

Despite arguments pro and contra as to the relative merits and efficiency of each type of keyboard, the main consideration appears to be largely one of choice.

Ever since the days of the first practical typewriter, the original Remington Model No. 1, the four-row keyboard has been considered and called, the "Standard". The three-row keyboard is generally referred to as the "Universal".

Unquestionably, custom and usage have secured a place for the four-row keyboard that must endure. Operators trained through years of schooling and experience, prefer it, and the majority of typewriter manufacturers have adopted it, as standard equipment. It is the arrangement taught principally in all schools of typewriting, and the touch operator finds it natural because it fits his training.




The majority of typewriters in use today are four-row keyboard machines. Because generally looked upon as standard, it has not, particularly in recent years, been necessary to advance very many arguments for the four-row arrangement. On the other hand, proponents of the three-row keyboard, present a very strong array of reasons why the three-row arrangement of the keyboard is more practical and efficient and, therefore, to be preferred.

Freak arguments of unusual combinations of words or characters are often submitted by both sides to prove their claims, as for instance, that in the writing of an amount, say, $121.56, an extra shift is required on four-row keyboard machines whereas the three-row arrangement allows the writing of all figures and every sign or mark used in connection with figures, without shifting.

The principal other reasons most frequently advanced for three-row keyboards are:

1. All letter keys are in the same arrangement as on the four-row keyboard machines, therefore, in the bulk of the work in everyday practice, the touch operator will not find any confusion.

2. Most operators, unless specially experienced, get away from the touch system when they are writing figures. As an example they point out that the average touch operator in writing any figures, will invariably look at the keyboard.

3. The three-row keyboard offers a practical keyboard for the touch operator because with the fingers at rest on a middle row, there is

## THE FOUR-ROW VS. THE THREE-ROW KEYBOARD —continued

but one row below and one row above, whereas on a four-row keyboard, there are two rows above and one below.

4. The three-row arrangement allows for heavier typebars and, therefore, stronger construction and better alignment.

In the matter of numbers, a very strong consideration in the selection of the keyboard might be that over two million Underwood typewriters having four-row keyboards, have been made and sold. Other companies such as Remington, Royal, L. C. Smith, Woodstock, each making machines with four-row keyboards, count their sales by serial numbers each running into hundreds of thousands.

But the fact must also be considered that over one million Olivers with three-row keyboards have also been made and sold; that the Corona, a three-row keyboard, portable typewriter, is nearing its six hundred thousandth machine; the Underwood portable typewriter, with a three-row keyboard and but a few years on the market has passed its 80,000 serial; the Noiseless, another three row, standard size typewriter, is in its 60,000 serials and over 60,000 Rex typewriters, also with three-row keyboards, have been made and sold.

As was said at the start of this chapter, the whole consideration is largely one of choice. Some of the highest priced operators in large business houses, in order to gain the advantage of quiet, have adopted and seem to have lost none of their speed or efficiency on a three-row keyboard typewriter. As judged by this one example, it seems that the keyboard arrangement was secondary in importance to the matter of quiet.

In the purchase of an automobile, the gear shift if different from that on the majority of cars, is usually a relatively unimportant consideration. The car is really selected because of its other inherent qualities. And, perhaps, in the final analysis, the same may be true of typewriters as regards keyboard arrangement.

*The fundamental idea of the DIGEST is different from anything else ever before applied to any line of business. If you do not entirely understand its reason and plan, read Pages 5 to 12.*

## AMERICAN MANICOPY TYPEWRITER

The American Manicopy Typewriter Company, 29 South La Salle Street, Chicago, Illinois, have in process of development a typesetting machine, by which type for a duplicating machine is set automatically by the operation of a typewriter.

A standard typewriter is located on and connected with a type magazine and a selecting mechanism. As the letter or other form to be composed is typed in the usual manner on a sheet of paper in the typewriter, the type is selected automatically from a magazine and composed and locked on a specially designed line bar. Errors in composition may be corrected through the back space mechanism of the typewriter.

When the setting of the matter is completed, the line bars are placed in the flat bed of a duplicating machine, which utilizes a cylinder to make impressions through an inked ribbon or with printer's ink direct from the type. Present development is limited to the use of fac-simile typewritten forms, in Pica or Elite size type.

After the printing is completed the type is automatically distributed, through the operation of a crank, into the channels of the composing mechanism. The device is electrically operated. The typewriter is readily detached for regular correspondence purposes when required.

It is understood that the device is, at the present time, in the development stage and that it will not be marketed for some time.

## CENTURY NO. 10




Sold by the American Writing Machine Company, 449 Central Avenue, Newark, New Jersey. Sold through their branch stores located in principal cities.

A medium size, front stroke, double (basket) shift, three-row keyboard, visible writing machine. Placed on the market as the Century No. 10, in 1919; previously it was known as the Remington Junior. It weighs 17 pounds; writes 84 characters; takes paper 9½ inches wide and writes a line 8 inches long. Made in one model only, as above described .....$55.00

**MACK'S TYPEWRITER OIL**

***Pure, Odorless, Gumless and Colorless***

**USED ON ALL DELICATE MACHINERY**

***In Use All Over the World***

***Write for Free Samples and Prices***

**MACK BROTHERS**

**Wholesalers — Exporters** **CRAWFORDSVILLE, INDIANA**

## DEMOUNTABLE

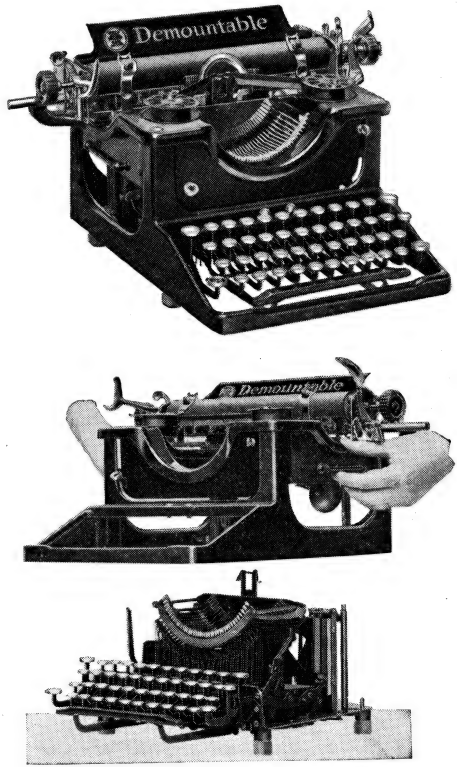
Made by the Demountable Typewriter Company, Fond du Lac, Wisconsin. Sold by dealers and special representatives throughout the country.

### Principally Emphasized Features

1. Made in sections, all interchangeable and replaceable. A latch at the rear of the machine allows the operator to remove the carriage, ribbon mechanism and outside frame as one assembly, from the printing mechanism, for cleaning or replacement.

2. Carriage and platen instantly removable and interchangeable. Paper feed rolls removable for cleaning. The same machine may at any time be changed into a wider carriage machine by the purchase and substitution of a wider carriage, which is interchangeable as needed, with the original narrow carriage.

   The action or typebar assembly unit, the part of the typewriter most susceptiable to wear, can be removed and replaced with a new unit at any time, at about one-half the usual cost of a new typewriter. Type arrangements, of different sizes or for foreign languages may likewise be substituted. Standardized manufacturing process assures interchangeability of like parts of different machines.




Illustrating Demountable Feature

3. All the refinements of usual standard typewriter construction, plus the demountable feature, are embodied in the machine.

## DEMOUNTABLE—continued

**General Features:** Standard size, front stroke, single (basket) shift, visible writing; unit construction, demountable by the operator.

**Keyboard:** Four rows, 42 keys writing 84 characters; right and left hand shift keys equipped with shift lock and release; back space key; margin release key situated above keyboard on front frame panel; tabulator key.

**Carriage:** Demountable by operator. Mounted on caterpillar ball bearings (two sets of eleven bearings mounted in a special frame so as to at all times present four balls in each set to the carriage rail). Platen easily removed and interchangeable. Removable unit feed rolls. By changing the carriage rail, a wide carriage may be substituted for a narrow carriage on any machine. Regular correspondence machine takes paper 11 inches wide, writing line 10 inches long. Rotary escapement. Single key tabulator, operated from key on keyboard with stops set from front of machine; right and left hand line space lever with adjustment for single, double or triple spacing and with ratchet throw-off; back spacer operated from key on keyboard; right and left hand margin locks; adjustable paper fingers; variable line spacer. Forward tilting paper table to allow adjustment of margin and tabulator stops.

**Printing Mechanism:** Removable and interchangeable, flat steel type bars, mounted in a one-piece slotted segment. Type guide at printing point. Type bars have heels to prevent battering of type.

Two-color, ½ inch ribbon with manual reverse and throw-off for stencil cutting.

**Construction:** Demountable as above described; bearings protected by dust covers. Type faces, Pica or Elite.

### Models and Prices

| | |
|---|---|
| Section 1, type action unit, complete | $ 40.00 |
| Section 2A, base unit, complete | 10.00 |
| Section 2B, deck unit, including ribbon mechanism | 35.00 |
| Section 2, 11-inch carriage, complete with way-rod assembly | 20.00 |
| Total price of assembled machine | $105.00 |
| Section 3, 14-inch carriage, complete with way-rod | $ 30.00 |

If a 14-inch carriage machine is originally ordered, and 11-inch carriage is later desired, extra way-rod assembly is not required.

| | |
|---|---|
| 11-inch carriage without way-rod assembly | 18.50 |

TYPE for TYPEWRITERS, ADDING MACHINES, etc.

Twenty Years' Experience Supplying Large Manufacturers

**HULSE MANUFACTURING CO.**

GENEVA, N. Y.

## HAMMOND MULTIPLEX

(See Also "Portable Typewriters")

Made by the Hammond Typewriter Company. Factory and general offices: 69th Street and East River, New York City. Sold through branches and specially appointed dealers throughout the country.

### Specifications



**General Features:** A standard size machine, utilizing the type wheel principle; double shift; visible writing. Type faces are semi-circular one-piece plates (called shuttles) of vulcanized rubber composition on which are moulded a full set of characters (upper and lower case of a full alphabet, including figures, punctuation and special characters). Over 360 type arrangements in a variety of styles, in all languages, all interchangeable, are provided.

**Operation:** A broad-rimmed type-wheel (also known as type-carrier or anvil) is provided with two positions for clamping two different sets of type at one time around its rim, thereby affording at all times two styles of type on the one machine, each of which is interchangeable and may be replaced by any other style. Either set of type faces is brought into printing position instantly, by a setting knob.

As each character on the type-wheel face is designated by the depression of a key on the keyboard, the type-wheel brings the corresponding type character into position to be imprinted on the paper. A hammer, operating from behind the paper, makes the necessary impact to make the impression. The power of the hammer blow is always the same, producing absolutely uniform impressions regardless of the variation of the touch or key depression. The force of the hammer blow is adjustable and equipped with three different faces of different degrees of hardness, for varying numbers of carbon copies or for stencil cutting. Speed of operation is equivalent to typewriters of standard type bar design.

**Variable Spacing Model:** Is a late development providing for variable spacing between characters when different size type faces are used. Letter spacing is made to correspond with the type face. Thus, when "micro," the smallest style of type face (equivalent to 6 point printers type) is used, the spacing is 18 characters to the inch, to harmonize with the height of the letter; when pica or medium size type face (equivalent to 12 point printers type) is used, the spacing is 10 characters to the inch; when medium Roman or larger type face is used (as large as 18 point printers type), the spacing is 4 characters to the inch.

**Keyboard:** Standard, three row, double shift, writing 90 characters (or up to 120 characters on Mathematical models). (The older style of keyboard, known as the Ideal, has the keys ranged in semi-circular formation in two rows and has also a double shift.) Shift keys located on right and left sides of keyboard.

**Carriage:** Runs on ball bearings and its construction is such that it takes any width of paper. Four widths of carriages, varying in the length of the writing line, are provided but are not interchangeable. Paper is fed into the carriage, right side up; that is, the bottom of the paper is

## HAMMOND MULTIPLEX—continued

inserted first, and rolls itself up in the perforated drum of the carriage. A distinctive type of escapement mechanism is provided. Left hand line spacer with adjustment for single, double or triple spacing. Adjustable front right and left hand margin stops. A paper bail serves instead of the usual paper fingers.

**Printing Mechanism:** Type wheel construction as above described. Two-color ribbon with manual reverse, and throw-off for stencil cutting.

**Construction:** Semi-enclosed. Dimensions: Width, 13 inches; depth, 13 inches; height, 7 inches; weight, 21 pounds, including cover and base.

### Multiplex Models and Prices

Regular Model, "A" carriage, 8½" line or 85 characters.....$105.00
Regular Model, "B" carriage, 12" line or 120 characters..... 120.00
Regular Model, "C" carriage, 16" line or 160 characters..... 130.00
Regular Model, "D" carriage, 20" line or 200 characters..... 140.00
Mathematical Model, with keys for extra signs and characters up to 120, equipped with shift keys for numerator and denominator ..... 115.00
Reversible Model, writes in either direction from left to right or right to left; controlled by lever, for such languages as Arabic, Persian and Hebrew, with spacing from 5½ to 14 characters to the inch ..... 135.00
Variable Spacing Model, CC, DD, GG, FF, for two degrees of spacing, with veneer cover ..... 155.00
Variable Spacing Model, BB, BB2, for three degrees of spacing, with veneer cover ..... 195.00
Variable Spacing Model, EE (one spacing), either 11, 12, 15 or 18 letters to the inch, with metal cover..... 120.00

**All models are equipped with two type-shuttles (two sets of type faces)**

## ELLIOT-FISHER

See Billing Machines; also Bookkeeping Machines.

## KLEINSCHMIDT TELEGRAPH TYPEWRITER

See section "Intercommunicating Systems".

## HOOVEN AUTOMATIC

See section "Duplicating Machines".

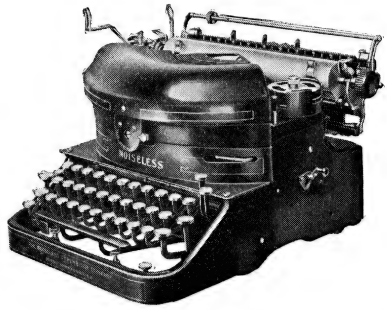
*The descriptions you are reading have not been prepared, nor influenced by any of the manufacturers whose products are included. The DIGEST is impartial.*

## NOISELESS

(See Also "Portable Typewriters")

Made by the Noiseless Typewriter Company, general sales office, 253 Broadway, New York City. Recently consolidated with the Remington Typewriter Company. Sold by the Remington Typewriter Company's sales force through branch offices throughout the country.

### Principally Emphasized Features




1. Permanently and constitutionally quiet; may be operated anywhere without the distraction and irritation so commonly caused by the usual noise of typewriter operation.
2. Printing is accomplished by pressure instead of by the hammer blow, usual on other machines, making operation permanently noiseless. The distance which the type travels is limited by the length of the type action itself, and is so fixed that each type just reaches the paper, but does not touch the platen. Through an ingenious combination of leverage, impelled by the momentum of a rapidly moving weight on each type bar, the action after the type reaches the paper, exerts a very strong pressure, insuring perfect registration on the original and carbon copies.
3. Printing is modified and the degree of pressure controlled by a fore-and-aft adjustment of the platen, controlled by a graduated dial conveniently placed on the front of the machine just above the keyboard. The adjustment increases or decreases minutely the distance between the platen and the type face, at the end of the type bar stroke. Thus, the pressure may be varied according to the number of carbon copies required or to control the density of inking to match fill-ins on process letters.
4. Indestructible steel platen.

### Specifications

**General Features:** Standard size, thrust stroke, double shift (carriage shift), visible writing. This model (No. 5) was placed on the market in February, 1923, and supersedes Model No. 4, manufactured since 1913.

**Keyboard:** Three rows, 30 keys writing 90 characters. The present model has the commercial arrangement of keyboard (the arrangement of the letter keys is the same as on four-row keyboard machines, making it possible for a touch operator to change from one machine to another without confusion). Right and left hand shift keys, with left hand shift lock. Back space, tabulator and release keys situated on keyboard. Touch adjustable by operator by means of a thumb screw, affecting the tension of all operating keys at once.

**Carriage:** Mounted on ball bearings; takes paper 10½ inches wide, writing line 9½ inches long. Full drop speed escapement. Eight unit feed rolls with spring tension lever adjustable by operator, to control cards and heavy form work without slipping; left hand line space lever with adjustment for

## NOISELESS—continued

one, two and three line spacing and platen ratchet release; right and left margin stops; paper fingers designed to provide means of writing to extreme bottom of sheet; variable line spacer; adjustable lateral paper guide; paper release key on right side of carriage; right and left hand carriage release levers; single-key tabulator operated from key on keyboard.

**Printing Mechanism:** Type bars are of steel with a projection to prevent battering and are instantly removable without special tools. Type guide at printing point, locking type against vertical and horizontal vibration.

Two-color ½-inch ribbon, with automatic reverse and cut-out for stencil work.

**Construction:** Cast frame; enclosed design; dust-proof. Type faces, Elite, Pica, Medium Roman, Gothic, Mica and Pin Point. All sizes smaller than Gothic can be had 10 or 12 characters to the inch; miniature Gothic is supplied 20 characters to the inch.

### Models and Prices
### (Model No. 5)

| | | | |
|---|---|---|---|
| *10″ carriage | takes paper 10½″ wide, | writing line 9½″ long | $135.00 |
| 12″ carriage | takes paper 12½″ wide, | writing line 11½″ long | 140.00 |
| 14″ carriage | takes paper 14½″ wide, | writing line 13½″ long | 145.00 |
| 16″ carriage | takes paper 16½″ wide, | writing line 15½″ long | 147.50 |
| 18″ carriage | takes paper 18½″ wide, | writing line 17½″ long | 150.00 |
| 20″ carriage | takes paper 20½″ wide, | writing line 19½″ long | 160.00 |
| 26″ carriage | takes paper 26½″ wide, | writing line 25½″ long | 185.00 |

*Standard correspondence model.

## OLIVER

Made by the Oliver Typewriter Company. General offices, 159 North Dearborn Street, Chicago, Illinois. Sold direct by mail and through specially appointed dealers and agents.

### Principally Emphasized Features

1. All advantageous, original Oliver features incorporated in over one million machines of previous models manufactured for 28 years, including the distinctive arch construction and actuating principle of the type bar.
2. Various size carriages interchangeable by the operator.
3. Increased speed with noise reduced to the minimum consistent with efficiency.




### Specifications

**General Features:** Standard size, down stroke, double (carriage) shift, visible writing. Placed on the market in July, 1922.

## OLIVER—continued

**Keyboard:** Three rows, 28 keys writing 84 characters; right and left hand shift keys and shift lock; tabulator key and separate right and left margin release keys, situated directly above the top row of keyboard.

**Carriage:** Interchangeable, mounted on roller bearings; standard correspondence model, takes paper 10½ inches wide, writing a line 9 inches long; rotary escapement; paper feed rolls extend entire length of carriage; inbuilt tabulator operated from single key above keyboard. Line space and carriage return operated from left platen knob with an adjustment for single, double and triple line spacing and ratchet release. Back spacer operated from lever on right side of machine; variable line spacer; adjustable paper fingers.

**Printing Mechanism:** Type bars of distinctive "U" shape or arch design are mounted on either side of the printing point, held at both ends of the axle and strike downward on the platen.

Two-color, nine-sixteenths inch ribbon with automatic reverse and stencil throw-off. An indicating device denotes the exact printing point, moving out of the way with the downward stroke of the type bar.

**Construction:** Enclosed base. Inbuilt noise-reducing features. Type faces: Pica, Elite, Medium Roman or Print-type.

### Models and Prices

Model No. 11 with 11-inch carriage, taking paper 10.5 inches, writing line 9 inches.....$75.00

Model No. 11 with 12-inch carriage, taking paper 12 inches, writing line 10.45 inches..... 80.00

Model No. 11 with 15-inch carriage, taking paper 14.5 inches, writing line 13.25 inches ..... 85.00

Model No. 11 with 18-inch carriage, taking paper 17.82 inches, writing line 16.60 inches..... 90.00

Any carriage narrower than the one originally supplied, can be substituted at any time. Any carriage wider than the one originally supplied, can also be substituted at any time but must have a wider rail.

## REMINGTON

(See Also "Portable Typewriters")

Made by the Remington Typewriter Company, Incorporated. Executive offices, 374 Broadway, New York City. Sold by specially appointed dealers and their sales force throughout the country.

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*Please note that descriptions are not made up of catalog phraseology. Each analysis represents a careful study of the subject.*

## REMINGTON—continued

### Principally Emphasized Features

1—Every fundamental feature found advantageous and successful in previous models is contained in machines of the present line.

2—In-built buffers, special platen and felt insulated side plates, reduce noise to a minimum.

3—Double-coiled wire spring anvil, accelerates the return action of the typebar, cushions the blow and preserves alignment by preventing imbedding of segment by typebars of keys most used. Renewable and adjustable.

3—The "Natural touch" is afforded by equalized key tension throughout the entire keyboard, being the scientific adjustment of the key action to conform to the natural muscular movements of the human hands.




Quiet Model No. 12

### Specifications

**Model No. 12** is equipped with a selective tabulator usually referred to as the "Self-starter", controlled from five keys mounted in a row, above and paralleling the top of the keyboard. Provides tabulations for the various indentations of paragraphs, salutations, etc., of letters and other forms. This model was placed on the market in 1922.

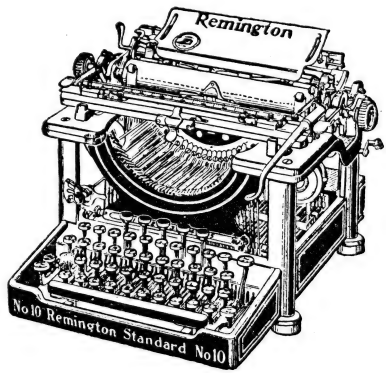
**Model No. 11** is the same in every feature as Model No. 12, except that it has a decimal tabulator operated from ten keys mounted above and paralleling the top row of the keyboard. It also has the noise reducing features of the Model No. 12.

**Model No. 10** was discontinued late in 1923. It was the basic machine from which Models No. 11 and No. 12 have been designed. First placed on the market in 1908 and improved in 1921.




Quiet Model No. 11

## REMINGTON—continued




Model No. 10

**General Features of all models:** Standard size, front stroke, single shift (carriage shift), visible writing.

**Keyboard:** Four rows, 42 keys, writing 84 characters; right and left hand shift keys, with left hand shift lock and releases; tabulator keys located above top row of keyboard; back spacer and margin release keys.

**Carriage:** Mounted on roller bearings; standard carriage takes paper 10½ inches wide, writing line 8.1 inches long; rotary escapement. Two sets of unit feed rolls with release lever. Model No. 12 has an in-built selective tabulator called the "Self-starter," used for indentations on letters, etc. Model No. 11 has a ten-key decimal tabulator. The decimal tabulator is equipped with adjustable stops set from the front, and a governor. Right or left hand line space levers, (right hand is standard), with adjustment for one, two or three line spacing; also throw-off to allow platen to revolve freely; back space mechanism operated from key on keyboard; right and left margin stops, two sets on each side (for double margins on legal forms, etc.), with lock to prevent overprinting at end of line, and release located on center of bar located in front of variable line spacer; lateral paper guide; adjustable paper fingers or overhead bail; right and left margin release levers.

**Printing mechanism:** Typebars are of steel, corrugated, with case hardened type and heels to prevent battering, mounted on a removable, renewable and adjustable bearing, in a one-piece slotted segment; type guide at printing point.

A feature is an adjustable and renewable double-coiled wire spring anvil superseding the cast anvil. The mechanical properties of this type of anvil provide acceleration of the return stroke of the typebar, cushions the blow, and preserves alignment by eliminating the imbedding usual on cast anvils, at the point of contact of the most used typebars.

Two-color ½-inch ribbon, with automatic reverse and cut-out for stencil work.

**Construction:** Cast frame, equipped with felt insulated side plates. All metal parts not enameled or nickeled are rustproofed.

### Carriage Sizes

| Size | Length of Writing Line | Maximum Paper Size | Over All Width |
|---|---|---|---|
| A | 8.1 inches | 10.5 inches wide | 15 inches |
| B | 9.5 inches | 12.0 inches wide | 17 inches |
| C | 12.0 inches | 14.5 inches wide | 19.5 inches |
| D | 16.0 inches | 18.5 inches wide | 23.5 inches |
| E | 22.0 inches | 24.5 inches wide | 29.5 inches |

## REMINGTON—continued

### Models and Prices

| Model | CARRIAGE A | B | C | D | E |
|---|---|---|---|---|---|
| 12 | $102.50 | $107.50 | $112.50 | $130.00 | $155.00 |
| 11 | 122.50 | 127.50 | 132.50 | 150.00 | 175.00 |

**Type Faces:** Pica, Medium Roman, Elite or Gothic.

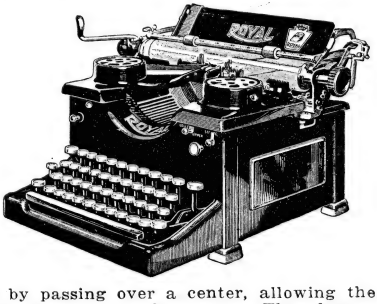
## ROBERTS "90"

Made by the Roberts Typewriter Company, Stamford, Connecticut. Sold direct and through dealers. Successor to the "Blick—90". A front stroke, three-row keyboard, basket shift, visible writing machine having a two-color ribbon, back spacer, tabulator and is intended to sell at a retail price of $60.00. As its name implies, it writes 90 characters. Weight, without case, 10½ pounds. It is understood that quantity production has not as yet been reached.

## ROYAL

Made by the Royal Typewriter Company, Incorporated. Executive offices, 364 Broadway, New York City. Sold by specially appointed dealers and their sales force throughout the country.

### Principally Emphasized Features




1—A light, responsive, elastic key action and a mechanical cushion effect produced in the key levers, secured by the design of the "accelerating type bar mechanism." As the depression of the key lever progresses, the ratio of speed of the type bar is increased.

2—The construction of the type action of the special Quiet Model is such that at a point a short distance (approximately 15 degrees) from the platen, the driving leverage is lost by passing over a center, allowing the type bar to travel by its attained momentum to the paper. The absence of an anvil on the segment eliminates noise of impact, and all other sounds of operation are muffled down to a minimum. There is an increased lightness and elasticity in the touch. The result is a positive uniformity of impressions with a maximum of speed and a minimum of noise.

3—Triple service; letter writing, card typing and billing without extra attachments and without change of adjustments.

### Specifications

### Master Model No. 10

This improved model was first placed on the market in September, 1921, and supersedes various other models manufactured since 1908.

## ROYAL—continued

**General Features:** Standard size, front stroke, single shift (carriage shift), visible writing.

**Keyboard:** Four rows, 42 keys, writing 84 characters, right and left hand shift keys, with left hand shift lock and double releases; back space key and tabulator key situated on keyboard; touch adjustable by operator by thumb screw (located underneath machine) affecting the tension of all operating keys at once.

**Carriage:** Mounted on ball bearings operating as axles inside pinions meshed with a geared track; takes paper 11 inches wide, writing line 9¼ inches long; roller contact (anti-friction) rotary escapement of exclusive design; unit tabulator operated from key on keyboard; left hand line space lever, with adjustments for single, double and triple line spacing; also with ratchet throw-off; carriage release levers at each end of carriage; back space mechanism operated from key on keyboard; right and left hand margin stops with line lock to prevent over printing at end of line; margin release, operated from key on front panel above keyboard; positive locking, variable line spacer on left twirler knob; single rear and unit front feed rolls with release lever; built-in card device, with overhead bail and adjustable margin and tabulator stops. Positive locks operate automatically to hold carriage in upper or lower position during travel of type bar to prevent high or low mis-alignment. The weight of the shift is balanced.

**Printing Mechanism:** Type bars corrugated, mounted in one piece segment with single type-bar pivot; accelerating type bar action increases the ratio of speed of the type bar as the key is depressed, insures speed and adds to manifolding power; projection on each type bar prevents battering of type faces by striking against each other; one piece type guide.

Two-color ½-inch ribbon with automatic reverse, and cut out for stencil work; positive guides to prevent portion of any character being printed in a second color.

**General Construction:** Cast frame, with glass side plates, designed to reduce noise in operation; dust shields located in interior mechanism over bearings and other delicate parts.

### Quiet Model

The Quiet Model is the same in all general features as the Master Model above described, except for a change in the design of the type bar action, and a lighter touch (as described on preceding page), designed to increase speed and reduce the noise in operation.

### Prices of all Models

| | |
|---|---|
| Model No. 10 (Standard Model) | $102.50 |
| Model No. QX (Quiet Model) | 105.00 |
| Model No. X-12, takes paper 13″ wide, writes line 11″ long | 107.50 |
| Model No. X-14, takes paper 15″ wide, writes line 13¼″ long | 112.50 |
| Model No. X-18, takes paper 19″ wide, writes line 17¼″ long | 122.50 |
| Model No. X-20, takes paper 21″ wide, writes line 19¼″ long | 150.00 |

**Type Faces:** Pica, Elite, Medium Roman, Elite or Pica Single or Double Gothic, Medium Roman Single Gothic.

## SHILLING BROS.

Made by Shilling Brothers Typewriter Company, Incorporated. General offices and salesrooms, 428 Fourth Avenue, Pittsburgh, Pennsylvania. Sold by specially appointed representatives and dealers throughout the country.

## SHILLING BROS.—continued

### Principally Emphasized Features

1—Entire type section can be removed from the frame of the machine, making it possible for the operator to clean, oil or adjust all parts. It also permits of the substitution of separate type for writing foreign languages.

### Specifications

**General Features:** Standard size, front stroke, single (basket) shift, visible writing; open face construction.

Placed on the market in 1921, this machine is a development and improvement on several machines previously manufactured under different names. (Reliance, Pittsburgh Visible, etc.). The principal improvement is the four-unit construction, (consisting of the type basket, carriage, ribbon reverse mechanism and frame), all removable, and improved tabulator and two-color ribbon device.

**Keyboard:** Four rows, 44 keys writing 88 characters; right and left hand shift keys with right hand shift lock and release.

**Carriage:** Mounted on ball bearings; takes paper 11 inches long. equipped with nine unit feed rolls and release, single key tabulator, operated from push button on side of machine; left hand line space lever with adjustment for single, double and triple spacing and ratchet throw-off; right and left hand margin locks; adjustable paper fingers.

**Printing Mechanism:** Basket shift. The entire basket is released by a button and is removable from the frame of the machine. Type bars mounted in a slotted segment with type guide at printing point, with heels to prevent battering.

Two-color, ½-inch ribbon with automatic reverse and throw-off for stencil cutting.

**Construction:** Enclosed base. Type faces, Pica and Elite.

### Models and Prices

Model No. 22, as above described.....$75.00

## L. C. SMITH

Made by L. C. Smith Brothers Typewriter Company. Factory and executive offices, Syracuse, New York. Sold by specially appointed dealers and their sales force throughout the country.

### Principally Emphasized Features

1—Ball bearings; in type bar (each type bar mounted on 15 balls); in shift; in carriage runways and every other important functional part.

2—Shifting type segment (the carriage remains stationary and the type bar section raises for capitals) provides lighter shift, uniform on regular or wide carriage models.

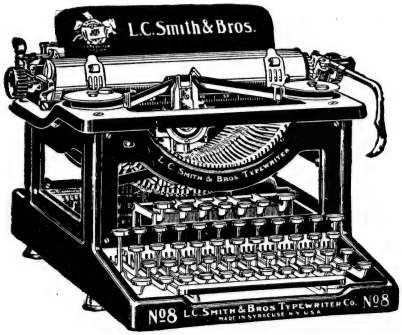
3—Interchangeable platen affording the use of platens of different degrees of hardness according to the number of copies desired.

4—Choice of right or left hand carriage return. Right hand return is standard equipment.

## L. C. SMITH—continued

5—Inbuilt, 5-key decimal tabulator.
6—Operation with minimum of noise consistent with meeting complete functions of a typewriter.

### Specifications
### Models No. 7 and No. 8




Models No. 7 and No. 8 are the same machine except that Model No. 7 has 38 keys writing 76 characters; Model No. 8 has 42 keys writing 84 characters. Both models have been on the market with improvements added from time to time, since 1915, superseding other models marketed since 1904.

**General Features:** Standard size, front stroke, single (basket) shift, visible writing.

**Keyboard:** Four rows, 42 keys (on Model No. 8) writing 84 characters, or 38 keys (on Model No. 7) writing 76 characters; right and left hand shift keys, equipped with left hand shift lock and releases; back space key, margin release key; five tabulator keys, and color control ribbon key, all situated on keyboard. Touch is adjustable (by mechanic only).

**Carriage:** Mounted on ball bearings; takes paper 10½ inches wide, writing line 8½ inches long; platen interchangeable easily and quickly; escapement, provides for half spacing for use in inserting an omitted letter; double sets of unit feed rolls; built-in decimal tabulator operated from five keys mounted above top row of keyboard; line space lever can be located at option of purchaser for right or left hand operation, and is provided with adjustments for single, double or triple line spacing; also with throw-off to allow platen to revolve freely; carriage release levers at each end of carriage; back space mechanism operated from key on keyboard; right and left margin stops with line lock to prevent over printing at end of line; line indicator; variable line spacer; adjustable paper fingers holding paper to allow typing to end of sheet; lateral paper guide.

**Printing Mechanism:** Type bars (corrugated) mounted on fifteen ball bearings in a basket segment, having adjustments for take up of wear; projection on each type bar and construction, prevents battering of type by striking against each other or on metal paper fingers; type guide.

Two-color, ½-inch ribbon, operated by carriage main spring, equipped with both automatic and hand reverse, with cut out for stencil work.

**General Construction:** Cast frame, open design; buffers or silencers are placed at noise centers to reduce noise to a minimum; ball bearings in type bars, carriage bearings and capital shift bearings, adjustable to take up wear.

### Models No. 3 and No. 6

Wide carriage machines (Model No. 3) and extra wide carriage machines (Model No. 6), having the same keyboard arrangement and otherwise the same as Model No. 8.

## L. C. SMITH—continued

### Prices of all Models

| | | |
|---|---|---|
| Model No. 8 | Standard correspondence model, 84 characters.... | $105.00 |
| Model No. 7 | Correspondence model, 76 characters..... | 100.00 |
| Model No. 3—12″ | Takes paper 12½″ wide, writes line 10½″ long.. | 110.00 |
| Model No. 3—14″ | Takes paper 14½″ wide, writes line 12½″ long.. | 117.50 |
| Model No. 6—20″ | Takes paper 20½″ wide, writes line 18½″ long.. | 150.00 |
| Model No. 6—26″ | Takes paper 26½″ wide, writes line 24½″ long.. | 160.00 |

**Type Faces:** A wide variety of all popular styles.

## SMITH PREMIER

### (Model No. 60)

Made by the Smith Premier Typewriter Company. General offices 374 Broadway, New York City. Sold through their own sales force and specially appointed representatives throughout the country and by the American Writing Machine Company of Newark, New Jersey, through their branch offices in principal cities.

### Principally Emphasized Features

1—Open-face construction without the obstruction of bars or rods, affording visibility and acessibility.

2—Extra size platen (1¾ inches in diameter) provides a better grip on the paper and adds to the life of the platen.

3—Designed in all its parts and action for the highest possible speed with a minimum of energy and effort on the part of the operator.

4—Type bar segment shifts for capitals; the carriage moves only from side to side. The weight to be shifted is constant regardless of width of the carriage, lessening fatigue and increasing speed.




### Specifications

**General Features:** Standard size, front stroke, single (basket) shift, visible writing; open face construction. Put on the market in 1923, this machine is a development and improvement upon the Monarch typewriter manufactured and sold extensively for years by the Remington Typewriter Company. The most quickly recognized improvement is that the type bars are mounted in a solid slotted segment, whereas the Monarch had individual type bar hangers.

**Keyboard:** Four rows, 46 keys writing 92 characters including eighth fractions; right and left hand shift keys with shift lock and release; back spacer keys; tabulator key and margin release key situated on the right of the front panel above the keyboard. Adjustable touch.

## SMITH PREMIER—continued

**Carriage:** Suspended between race rails with roller bearings mounted at right angles. Correspondence model takes paper 10.6″ wide, writes line 8.6″ wide. Tabulator is a special equipment of the ten-key decimal design. Left hand line space lever with adjustment for single, double or triple spacing and ratchet throw-off; back spacer operated from key on keyboard; right and left hand margin release levers with line lock; adjustable paper fingers; variable line spacer.

**Printing Mechanism:** Basket shift with type bars mounted in a solid slotted segment with a stroke stop. Type guide at printing point.

Two-color, ½-inch ribbon with four position adjustment; one position for each color of two-color ribbon, stencil cutting position and a serpentine movement for one-color ribbon to insure the use of the entire ribbon. Automatic reverse.

**Construction:** Open face, designed for speed of operation; frame is enclosed with dust panels.

### Prices: Model No. 60

| Carriage | Width of Paper | Writing Line | Correspondence Machine | Tabulating Machine |
|---|---|---|---|---|
| A | 10.6 | 8.6 | $102.50 | $122.50 |
| B | 12.1 | 10.1 | 107.50 | 127.50 |
| C | 14.6 | 12.6 | 112.50 | 132.50 |
| D | 18.6 | 16.6 | 130.00 | 150.00 |
| E | 22.6 | 20.6 | 150.00 | 175.00 |
| F | 26.6 | 24.6 | 160.00 | 185.00 |
| G | 32.6 | 30.6 | 175.00 | 200.00 |

## UNDERWOOD

(See Also Portable Typewriters and Bookkeeping Machines)

Made by Underwood Typewriter Company, Incorporated, 63 Vesey Street, New York City. Sold by specially appointed dealers and their sales force throughout the country.




### Principally Emphasized Features

1. The original front stroke, visible typewriter, refined and perfected to its present day construction for which it is claimed to be the standard of the world.
2. Over two million machines have been sold to date, indicating its preference by users everywhere.
3. A long record of speed contests won by amateur and professional operators.

## UNDERWOOD—continued

### Specifications
### Models No. 4 and No. 5

Models No. 4 and No. 5 are the same machine except that Model No. 4 has 38 keys writing 76 characters; Model No. 5 has 42 keys writing 84 characters. Both models have been marketed since 1900, improvements having been added from time to time; the last improvement (October, 1923) being some minor changes in mechanical design, and arrangement of wing scales (at base of line on each side of printing point) to raise with the carriage when capital shift is operated.

**General Features:** Standard size, front stroke, single shift (carriage shift) visible writing.

**Keyboard:** Four rows, 38 keys (on Model No. 4) writing 76 characters, or 42 keys (on Model No. 5) writing 84 characters; right and left hand shift keys, with shift lock operating in connection with right hand shift key; tabulator key and back spacer key located on keyboard, margin release key located above left side of keyboard; individual key tension adjustable by operator.

**Carriage:** Mounted on ball bearing rollers; takes paper 10½ inches wide; writing line 8 inches long; instantaneous lock on upper and lower case; rotary ball bearing escapement with center point bearings for loose and rigid dogs, designed to prevent crowding, piling or skipping of letters; built-in tabulator with automatic brake, unit style operated from single key on keyboard; left hand combination carriage return and line space lever with adjustments for one, two or three line spacing, and release to allow free rotation of platen; right hand paper release lever; back space mechanism operated from key on keyboard; right and left margin locks operated from front of carriage in connection with computing scale for visible centering of all lines; right side lock, equipped with bell signal warning, prevents type from striking when end of line has been reached; line indicator scale (called wing scales) on each side of printing point, raise and lower with platen when carriage is shifted; variable line space mechanism attached to left side platen knob; lateral paper guide attached to paper table; front sliding paper fingers; pressure lever for holding envelopes or cards flat while imprinting.

**Printing Mechanism:** Type bars of flat hardened steel, corrugated with projection on end to prevent battering; mounted in a one-piece slotted segment with front and rear dust guard; ring and ball type bar bearings; striking ring on segment provides uniform impressions and steady alignment; type bars may be removed easily and replaced, singly, without disturbing any others; type guide enforces correct alignment by guiding and locking type bar in printing position.

Two-color ½-inch ribbon, mounted in vibrator at printing point; with automatic reverse and throw-off for stencil cutting.

**General Construction:** Cast base, open design.

### Model No. 3

Wide carriage machine, the same as Model No. 5, but without movable wing scales (added to Model No. 5 in October, 1923).

## UNDERWOOD—continued
### Prices of all Models

| | |
|---|---|
| Model No. 4 | $ 97.50 |
| No. 5 | 102.50 |
| No. 3—12″, takes paper 12″ wide, writes line 10½″ long | 107.50 |
| No. 3—14″, takes paper 14″ wide, writes line 12″ long | 112.50 |
| No. 3—16″, takes paper 16″ wide, writes line 14″ long | 122.50 |
| No. 3—18″, takes paper 18″ wide, writes line 16″ long | 132.50 |
| No. 3—20″, takes paper 20″ wide, writes line 18″ long | 150.00 |
| No. 3—26″, takes paper 26″ wide, writes line 24″ long | 160.00 |
| Decimal tabulator may be attached to any model. The tabulator operating keys are mounted in a straight row directly in front of forward cross member of frame. Price, extra | 20.00 |
| Card attachment, for Models No. 4 and No. 5, extra | 10.00 |
| Card attachment, for Model No. 3, extra | 12.00 |

## VICTOR

Made by the Victor Typewriter Company. General offices and factory, Scranton, Pennsylvania. Sold by dealers in principal cities.




### Principally Emphasized Features

1—Wide, cone typebar bearings affording an inch wide bearing approximating the strength and permanency of alignment so pronounced in the old style of standard blind typewriting machines.

2—Octuple roller bearings afford pronounced stability of the carriage.

### Specifications

**General Features:** Standard size, front stroke, single shift (carriage shift) visible writing. This model, (No. 10), was placed on the market in November, 1919, and supersedes Model No. 3 and previous models.

**Keyboard:** Four rows, 42 keys writing 84 characters; right and left hand shift keys with left hand shift lock and release.

**Carriage:** Mounted on octuple roller bearings, takes paper 10½ inches wide, writing line 9 inches long; interchangeable platen; rotary escapement; unit feed rolls; built-in decimal tabulator operated from a six-position indicator button and selector device, on the left of the front panel above the keyboard. Left hand line space lever with an adjustment for one, two and three line spacing and platen ratchet release; right and left margin stops with release push button located at the upper right of keyboard; back spacer operated from bar directly above top row of keyboard; adjustable paper fingers; right and left hand carriage release levers.

**Printing Mechanism:** Typebars mounted on individual hangers with adjustment for wear. The bearing end of the typebar has two legs with

## VICTOR—continued

bearings one inch apart. In action, when the bar travels toward the paper, a cone shaped stud on each leg enters a hole in the segment, thus locking the bar rigidly by the time it reaches the printing point.

Two-color, ½-inch ribbon with automatic reverse and throw-off for stencil cutting.

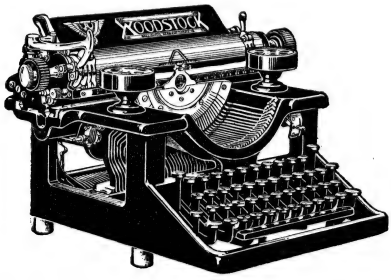
**Construction:** Open design. Type faces: Elite, Medium Roman, Gothic, large or small Italic.

### Models and Prices

Model No. 10, as above described.....$110.00

## WOODSTOCK

Made by the Woodstock Typewriter Company. General sales offices, 35 North Dearborn Street, Chicago, Illinois. Sold direct by their own salesmen and through specially appointed dealers and distributors.




### Principally Emphasized Features

1—Built on the unit system having a single casting each for (1) the base, (2) the top plate, and (3) the carriage, each carrying its own essential working parts.

2—Light action, open face construction and other features desirable on a standard typewriter.

### Specifications

**General Features:** Standard size, front stroke, single (carriage) shift, visible writing. Placed on the market in 1916, supersedes other models manufactured since 1914.

**Keyboard:** Four rows, 42 keys writing 84 characters; right and left hand shift keys, with left hand shift lock and release; back space, tabulator and margin release keys, located on keyboard. Tension is adjustable to the individual touch.

**Carriage:** Mounted in dirt proof rails on eight ball bearings. Standard correspondence model takes paper 11⅜ inches wide, writing line 9½ inches long. High speed rotary escapement; unit feed rolls. Tabulator is of the single key, inbuilt design, operating from key on keyboard and equipped with shock absorbing device on standard width carriages, and also with brake on wide carriages. Left hand line space lever with adjustment for single, double and triple spacing and ratchet release. Right and left margin release levers; back spacer operated from key on keyboard. Paper table tilts forward, affording access and visibility in setting tabulator margin stops in front of machine. Lateral paper guide; paper fingers have slide adjustment and are hinged at bottom. Scale indicator and line finding scale; inbuilt card holder is standard equipment. Variable line spacer of distinctive construction is a secondary knob operating through, but working entirely independent of, the regular left hand platen knob.

## WOODSTOCK—continued

**Printing Mechanism:** Type bars are pivoted in a one-piece type bar segment, having an abutment or striking ring against which the bars end their printing stroke, to provide uniform printing impressions and prevent pitting of platen. Type bars are provided with protecting heels to prevent battering of type faces. Type guide at printing point. Type bar bearings are adjustable.

Two-color, 9/16 inch ribbon with automatic reverse, actuated by a single stroke of any character key; stencil cut-out.

**Construction:** Unit construction, consisting of base, top plate and carriage each carrying its own essential working parts. Open design of frame and open face front construction.

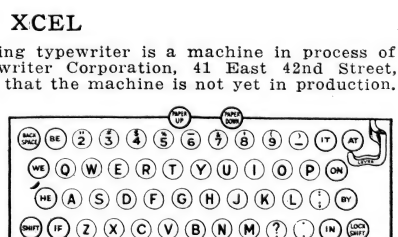
### Models and Prices

| | | |
|---|---|---|
| Model No. 5-F | Standard correspondence model, extra wide carriage, taking paper 11⅜" wide and writing a line 9½" long. | $100.00 |
| Model No. 6-J | The "Brief" model. Same as Model No. 5-F, but has a carriage taking paper 14½" wide and writing a line 13" long..... | 110.00 |
| Model No. 7-K | The "Policy" model. Same as Models No. 5-F and No. 6-J but has a carriage taking paper 18½" wide and writing a line 17" long..... | 130.00 |
| Model No. 8 | Under construction. Will have a 22" carriage. | |

## XCEL

The Xcel Standard Word-Writing typewriter is a machine in process of development by the Xcel Typewriter Corporation, 41 East 42nd Street, New York City. It is understood that the machine is not yet in production.

In general appearance the machine is similar to most standard typewriters and is about the same size. It is a single shift machine having five rows of keys. The four upper rows comprise a standard keyboard arrangement; there are 22 extra keys arranged in the bottom row and along each side of the standard keys, that write complete commonly used short words. Each word can be printed with the first letter a capital or lower case, as desired; they can be used as complete words or as parts or syllables of other words.



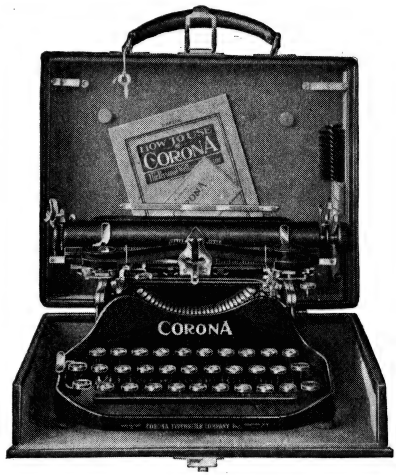

Keyboard Arrangement of the Xcel

Writing a complete word by the depression of a single key is made possible by an automatic multiple escapement and a distinctive arrangement of the type bars. The carriage return lever is situated to the right and just above the top row of the keyboard. The line spacing is controlled by two keys situated above the top row on the keyboard; one key feeds the paper up, another feeds the paper down. The escapement may be made inactive to provide for writing straight up or down in a column. The machine is constructed on the unit plan, being composed of five sections, each a complete assembly in itself. Construction is entirely of sheet metal and bar stock, no castings being used.

# Portable Typewriters

## CORONA

Made by the Corona Typewriter Company, Groton, New York. Sold through dealers and specially appointed agents.




The Corona is a folding, portable machine, having a hinged carriage to allow for folding in a very compact space. The present model, which does not bear a model number, was placed on the market in October, 1922, and is the successor of three other models which have been sold continuously since 1906.

### Specifications

**General Features:** Portable size, front stroke, double shift (carriage shift), visible writing. When the machine is to be placed in the case, the carriage folds over on the keyboard, during which time it is disconnected from the escapement. When folded back the carriage automatically locks itself in operating position.

**Keyboard:** Three rows. The regular model has 28 keys writing 84 characters; the XC model has 30 keys writing 90 characters; the XCD model has 30 keys writing 90 characters of which four keys are "dead" (i. e., these four keys are not connected with the spacing mechanism and are used for language accents). Right and left hand shift keys with left hand shift lock and release. Back space key situated above and to right of keyboard.

**Carriage:** Hinged on two steel arms to allow folding compactly over keyboard when placed in the case. Mounted on ball bearings and rollers. Takes paper 9¾ inches wide with writing line 8.3 inches long. Escapement is dog and rack design with adjustable tension. When folded the escapement is locked out of engagement with the rack to prevent damage while machine is in transit. Left hand line space lever with adjustment for single, or double line spacing. Back space mechanism operated from key on keyboard; right and left hand margin stops.

**Printing Mechanism:** Type bars are flat steel with heels to prevent battering; mounted in solid slotted segment. Type guide at printing point. Two-color ½-inch ribbon with automatic reverse.

**Construction:** Stamped aluminum frame, one piece. Size of machine when opened, 9¾x11⅝x6¾ inches; when folded, 9x11⅝x3⅞ inches; outside dimensions of case, 12½x10x4⅝ inches. Weight, 9¾ pounds with case; 6¾ pounds without case. Finish, black enamel with nickel trim. Type faces: Pica, Elite, medium Roman, billing or Italic.

## CORONA—continued

### Models and Prices

Regular Model, as above described, writing 84 characters.....$50.00
XC Model, same as above, but writing 90 characters..... 55.00
XCD Model, same as above, but writing 90 characters and with 1 to 4 dead keys, as required..... 55.00

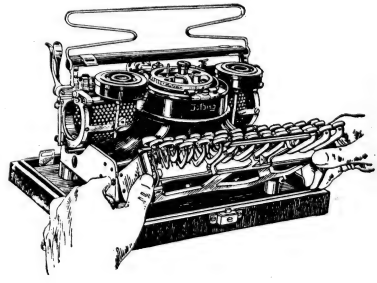
All models are fitted in basswood case covered with Fabrikoid and equipped with slip hinges and lock. A wide selection of special keyboard and type arrangements are provided to suit the vocation of different users, such as Medical, Engineering, Chemical, Polyglot, and 50 languages.

Note: It is understood that a model with a reverse movement carriage will shortly be placed on the market, for writing Hebrew, Arabic and such languages.

## HAMMOND MULTIPLEX

Made by the Hammond Typewriter Company. Factory and general offices: 69th Street and East River, New York City. Sold through branches and specially appointed dealers throughout the country.

Portable models of Hammond typewriters are made in two styles—folding and non-folding.



**The non-folding model** is the same in all respects to the regular Multiplex model, described under Standard Typewriters, except that all but the working parts are made of aluminum. Carriage 9½ inches wide, writing a line 7 inches long. It weighs less than 12 pounds and is furnished in a leather traveling case, the cover of which is removable, leaving the bottom to serve as a base for the machine.

**Folding model** is the same in general appearance, construction and operation as the non-folding model above described, except that the space bar folds over the keyboard and the keyboard folds into a vertical position. The paper rest (corresponding to the paper table) folds over the top of the machine. The carriage is locked in position when the machine is folded.

### Models and Prices

Non-folding Multiplex model with travelling case.....$110.00
Non-folding Mathematical model with travelling case..... 120.00
Folding Multiplex model with travelling case..... 98.50
Folding Mathematical model with travelling case..... 110.00

**All models are equipped with two type shuttles, (two sets of type faces)**

## NATIONAL

Made by the National Typewriter Company, Fond du Lac, Wisconsin. Sold by specially appointed dealers and agents.

### Specifications




**General Features:** Portable size, front stroke, double shift, (carriage shift), visible writing.

**Keyboard:** Three rows, 28 keys writing 84 characters; right and left hand shift keys with right hand shift lock and release; back spacer.

**Carriage:** Mounted on ball bearings; takes paper 10 inches wide, writing line 9 inches long. Left hand line space lever for single or double spacing. Back space mechanism operated from lever on left end of carriage; right and left margin stops with lock to prevent over printing at end of line; tabulator with adjustable stops operated from lever at left end of carriage; combination self-adjusting line finder, paper fingers and label holder.

**Printing Mechanism:** Type bars are of flat steel mounted in a solid segment with heels to prevent battering. Type guide at printing point.

Two-color ½-inch ribbon, reversed manually by thumb screws on top of ribbon spools.

**Construction:** Sheet steel frame, enclosed design. Weight, 9 pounds without case. Outside dimensions of case, 12 x 11½ x 7 inches.

**Type Faces:** Pica only.

### Models and Prices

Model No. 5, as above described.....$50.00

## NOISELESS

Made by the Noiseless Typewriter Company. General sales office, 253 Broadway, New York City. Recently consolidated with the Remington Typewriter Company. Sold by the Remington Typewriter Company's sales force through branch offices throughout the country.




**General Features:** Portable size, pressure stroke, double shift (carriage shift); visible writing.

The operating principle and noiseless feature are the same in all respects as the standard size machine. (For description see Standard Size Typewriters.) The Portable model was placed on the market in November, 1921.

**Keyboard:** Three rows, 28 keys writing 84 characters; right and left hand shift keys with shift lock and release; back space and margin release keys.

## NOISELESS—continued

**Carriage:** Mounted on ball bearings, takes paper 9½ inches wide, writes a line 7¼ inches long; steel platen; full drop speed escapement; left hand line space lever with an adjustment for one or two spaces and ratchet release; back space mechanism operated from key on keyboard. Right and left margin stops with lock to prevent over printing at end of line, and margin release key. Paper fingers provide means of writing to extreme bottom of sheet, also to permit the insertion of legal length envelopes.

**Printing Mechanism:** Type bars are of steel with a projection to prevent battering. Type guide at printing point. One-color 7/16 inch ribbon.

**Construction:** Non-folding. Weight 6½ pounds without case, 8 pounds with case; outside dimensions of case 11¼ inches long, 9½ inches wide and 4¾ inches high. Type faces, Pica, Elite, Medium Roman or Gothic.

### Models and Prices

Made in one model only, price..... .....$65.00

## REMINGTON

Made by the Remington Typewriter Company, Incorporated. Executive offices, 374 Broadway, New York City. Sold by specially appointed dealers and their sales force throughout the country.

### Specifications



**General Features:** Portable size, front and down stroke, single shift (carriage shift) visible writing. Type bars, when machine is to be placed in case, rest flush with top plate, and are raised, all at one time, to a writing position when machine is to be operated. A lever on the right side frame controls the raising and lowering movement. Placed on the market in August, 1921.

**Keyboard:** Four rows, standard, 42 keys writing 84 characters; right and left hand shift keys with shift lock and releases; back space and margin release keys.

**Carriage:** Mounted on roller bearings; takes paper 8.7 inches wide, writing line 7.7 inches long. Rack escapement. Two sets of paper feed rolls with release lever. Left hand line space lever with adjustment for single, double spacing. Back space mechanism operated from key on keyboard; right and left margin stops with lock to prevent over printing at end of line; variable line spacer; carriage locking device to hold carriage firmly when in case.

**Printing Mechanism:** Type bars are of flat steel corrugated, with case hardened type and heels to prevent battering; mounted in a solid slotted segment. Type guide at printing point. Two-color ½ inch ribbon, with automatic reverse.

**Construction:** Sheet steel frame. Non-folding. All metal parts not nickeled are rust-proofed. Weight, 11½ pounds with case; outside dimensions of case, 12 inches long, 11 inches wide and 4 inches deep. Type faces: Pica or Elite.

## REMINGTON—continued

### Models and Prices

Regular Model, black enamel finish, with case.....$60.00
De Luxe Model, ivory enamel finish, leather case..... 75.00

## ROCHESTER PORTABLE

A thrust stroke, compactly designed, double shift, visible writing typewriter, now in process of development and which is expected to be ready for the market soon. It is being manufactured by the Rochester Industries, Inc., Rochester, New York.

It is a stamped product, made of sheet steel without castings or heavy metal parts. Equipped with a three-row keyboard, writing 84 characters, and with right and left hand shift keys. Carriage accommodates paper 10 inches wide; has single and double line spacer, line release, adjustable margin stops. Equipped with back spacer, one color ribbon. Dimensions are: Length, 11½ inches; depth, 8½ inches; height, 2⅝ inches. Weight in carrying case, 5¾ pounds. Similar in its typebar arrangement to the Noiseless typewriter. The selling price has not been announced.

## UNDERWOOD

Made by the Underwood Typewriter Company, Incorporated. Executive offices, 63 Vesey Street, New York City. Sold by their own sales force throughout the country.




**General Features:** Portable size, front stroke, double shift (carriage shift), visible writing. Placed on the market in November, 1919.

**Keyboard:** Three rows, 28 keys writing 84 characters; left hand capital and figure shift key* with left hand shift lock; back space key. Individual key tension.

**Carriage:** Mounted on rollers and ball bearings. Takes paper 9⅝ inches wide, writing line 7.6 inches long. Ball bearing rotary escapement. Left hand line space lever with adjustment for single or double spacing, and platen ratchet release; sliding marginal stops in rear of carriage; automatic line locking mechanism; adjustable paper fingers; writing line scale; margin release key and carriage release lever at right end of carriage.

**Printing Mechanism:** Type bars are of flat steel, corrugated, mounted in a slotted segment; projection on type end to prevent battering or breaking. Type guide at printing point. Two-color ½ inch ribbon with manual reverse, and stencil device.

## UNDERWOOD—continued

**Construction:** Cast aluminum frame, non-folding. Dimensions: Length of machine without case 11⅜ inches; depth 8 9/16 inches; height 4 inches. Weight without case, 6 pounds, 5 ounces.

### Models and Prices

Made in one model only, with carrying case.....$50.00

*Machines having serial numbers over 85,000 and new machines may be equipped at any time with right hand as well as left hand shift keys, at an additional charge of.....$5.00

## ALLEN

Made by the Allen Typewriter Company, Allentown, Pennsylvania. Sold through specially appointed dealers and agents.

### Specifications

**General Features:** Portable size, front stroke, double shift, visible writing. Placed on market in 1921.

**Keyboard:** Three rows, 29 keys, writing 87 characters; shift keys for left hand operation equipped with positive lock and release; tabulator key on lower right corner of keyboard; back spacer lever located on front cross member of frame, operated by either thumb; left marginal stop and release, same release used for line lock release.

**Carriage:** Mounted on ball bearings; takes paper 9½ inches wide, writing line 7½ inches long; rotary escapement. Single paper feed roller; single key tabulator; right-hand line space lever with adjustment for single, double and triple line spacing.

**Printing Mechanism:** Type bars of special alloy steel mounted in a slotted segment; type guide at printing point. Two-color ½-inch ribbon with semi-automatic reverse.

**Construction:** Frame of cold rolled steel; weight 11¼ pounds; base size 10x12 inches, height 7 inches. Type face, pica only.

### Models and Prices

Regular model, black enamel finish.....$50.00
Special model, all nickel plated..... 75.00
Metal carrying case, extra..... 2.50

## DAYTON

The Dayton Portable Typewriter Company, Dayton, Ohio, have in process of development a portable typewriter which will probably be on the market in a short time. No information is given out by the company. It is understood, however, that the machine will be a front stroke, single shift machine having four rows of keys and expected to sell at a retail price of $35.00.

## Comparison of Portable Typewriters

| Name | Folding | Characters | Keyboard | Ribbon | Shift Keys | Carriage | | Dimensions | | | | Equipment | Price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Paper | Line | Weight | Width | Depth | Height | | |
| Allen | No | 87 | 3-row | 2-col | L | 9½″ | 7½″ | *11¼ | *12″ | 10″ | 7″ | BS, Tab. | $50.00 |
| Corona Regular | Yes | 84 | 3-row | 2-col | R & L | 9¾″ | 8.3″ | 9¾ | 12¼″ | 10″ | 4⅝″ | BS | 50.00 |
| Corona XC | Yes | 90 | 3-row | 2-col | R & L | 9¾″ | 8.3″ | 9¾ | 12¼″ | 10″ | 4⅝″ | BS | 55.00 |
| Corona XCD | Yes | 90 | 3-row | 2-col | R & L | 9¾″ | 8.3″ | 9¾ | 12¼″ | 10″ | 4⅝″ | BS, 4 dead keys for accents | 55.00 |
| Hammond, Folding | Yes | 90 | 3-row | 2-col | R & L | 9½″ | 8½″ | 11½ | 12″ | 9″ | 8″ | BS, Tab. | 97.50 |
| Hammond, Non-Folding | No | 90 | 3-row | 2-col | R & L | 9½″ | 8½″ | 11½ | 16″ | 14″ | 8″ | BS, Tab. Variable | 105.00 |
| National | No | 84 | 3-row | 2-col | R & L | 10″ | 9″ | *9 | 12″ | 11½″ | 7″ | BS, Tab. | 50.00 |
| Noiseless | No | 84 | 3-row | 1-col | R & L | 9½″ | 7¾″ | 8 | 11¼″ | 9½″ | 4¾″ | BS | 65.00 |
| Remington | Semi | 84 | 4-row | 2-col | R & L | 8.7″ | 7.7″ | 11½ | 12″ | 11″ | 4″ | BS, Variable | 60.00 |
| Underwood | No | 84 | 3-row | 2-col | †L | 9⅝″ | 7.6″ | 9¾ | 12¼″ | 9¾″ | 4¾″ | BS | 50.00 |

*Without case.

†Underwood portables having serial numbers over 85,000 and new machines, may be equipped at any time with right as well as left hand shift keys, at an additional charge of $5.00.

# Billing Machines

## CONTINUOUS FORM BILLING MACHINES

Typewriting machines using fan-folded and inter-folded forms as above described, and forms in continuous rolls, are designed to eliminate non-productive operations required in billing on an ordinary typewriter using individual cut forms.

Continuous form billing machines, eliminate the several individual operations of billing, such as inserting carbon between sheets, jogging the set of forms into alignment, inserting the forms in the typewriter, re-aligning the forms after they are in the typewriter, finding the first writing position, removing the carbon from the forms after the bill has been written.

The automatic feed features of such machines provide, by the single operation of removing a completed set of bills from the machine, the bringing of a new set automatically in exact position for the first writing operation, with each copy interleaved with carbon paper. The carbon paper itself is not handled.

The operator loads the machine but once in preparation for the writing of hundreds, and in many cases thousands, of sets of forms..

Two styles of carbon paper are used: Floating sheets are strips of carbon paper, approximately 24" long, fed with and between copies of the forms. One end of each sheet is attached to a blade, interleaved between each copy of the form, and when one form is removed each blade draws its sheet of carbon paper into position for the next form.

Roll carbon is fed from a roll, transversely across the continuous form, the free end clamped on the other side of the machine. Roll carbon does not move with the form.

With either arrangement of the carbon paper, a fresh surface can be brought to the printing position at any time by releasing clamps, and drawing the used portion out of the machine and tearing it off.

As compared with ordinary typewriters handling cut sheets and separate sheets of carbon, these machines provide exceptional speed by reducing to a minimum the time required for all operations, excepting the actual typing, without any additional physical strain on the operator.

## FAN FOLDED, INTER-FOLDED AND ROLL FORMS

Forms for use with Underwood Fan Fold and Elliott-Fisher billing machines, are of two kinds—inter-folded forms and fan folded forms. Both kinds provide multiple copies of the same or related forms for systems requiring the making of from two to thirteen copies at one writing. The different companies selling these forms, maintain staffs of systematizers to work out combinations of different forms, such as to provide copies of an invoice for several different departments and at the same time provide a stock requisition, inventory record and shipping receipt, etc. A wide variety of color combinations of paper and ink are afforded. To meet some special conditions, in the providing of carbon copies, forms in the combination may be carbon backed in part with what is known as spot carbon.

Any set of cut (single sheet) forms can be duplicated in continuous forms. They may be supplied completely prepared (border punched for binders, perforated, printed in two colors, printed on back, etc.)

When the continuous forms are removed from the machine, they are the same in appearance as single sheet forms.

**Fan Folded Forms** are continuous sheets of forms divided into sets by perforations between each form, each set folded zigzag, left and right to bring one form above the other in accurate registration for writing. One entire set if opened out, would be the combined width of the original and all copies. For storage and shipment, they are also folded, zigzag, top and bottom.

The original and all copies of fan folded forms, because they are printed on one sheet of paper, necessarily must be of the same weight and quality of paper. Different colors of paper are provided, however, by tinting different copies as required, with different colors, as they are printed, giving such copies the appearance of being printed on different colors of stock. Corner signals, printed in different colors, are also sometimes used to distinguish copies. Any number of different colors of ink may be used on the different forms. Copies may be consecutively numbered in sets or individually, or both. The maximum number of copies obtainable in one set is governed by the width of each form. The maximum combined width is about eight feet.

**Inter-folded Forms** differ from fan folded forms in that they are separate, continuous strips of forms (a strip for the original and each copy), collated one above the other to provide accurate registration. They are folded top and bottom in zigzag formation to provide for storage and shipment. The different copies of inter-folded forms may be of different weights and qualities of paper and printed with different colors of ink.

**Roll forms** are supplied wound in individual rolls, which are mounted in racks at the rear of the machine in which they are used, and collated automatically into sets as they are fed into the machine. Each roll being wound separately allows the use of different colors, grades or weights of paper for each form, and permit of changes in arrangement of the forms at any time to agree with any change in the system with which they are used. One or more copies can be eliminated or others added at any time without disturbing any others of the set.

## ELLIOTT-FISHER AUTOMATIC FEED BILLING MACHINE

A machine designed to handle continuous forms in rolls, fanfolded or interfolded, or a combination of either style of forms. It will also type on cut forms.

The mechanism for the rapid feeding of forms is confined to the platen. The writing head may be any one of the several designs manufactured by this company. Ordinarily, a plain writing head is used, but if automatic addition and subtraction is essential to the record, this requirement can be met by the use of a head equipped with adding-subtracting column registers or totalizers, and/or a cross computing register.

Continuous length forms are fed from the rear of the machine to the front over the flat platen and through the carbon paper, a new set of forms feeding into writing position, automatically, as each completed set is removed. The combination of the flat platen and the down stroke type bar, make possible a high degree of manifolding power and allow for the combining in one writing of many different kinds, sizes and shapes of forms.

Carbon paper in roll or sheet form, or a combination of both kinds can be used. Roll carbon is adaptable for use with roll and interfolded forms; sheet carbon with fanfolded forms. A specially constructed rack is supplied for attachment to the rear of the machine to hold any number of rolls.

Roll carbon is supplied in rolls containing 75 feet of two to ten plies. The sheets of the carbon paper are interleaved between the copies of the sets of forms feeding from right to left across the platen, the used portion

being rewound on a spool on the opposite side, which operation automatically brings new carbon surface into writing position. Only a small portion of the carbon paper is used at one time.

Floating sheets of carbon paper, when used, have their ends attached to individual interleaving blades, at the rear of the platen, and feed forward with the forms. When one set of forms is withdrawn, all carbon sheets are held in correct position for the next form.

When it is desired to remove a set of forms, pressure on a foot lever releases the tension and allows the entire set to be drawn forward to the front of the platen, at which point is located a cutting edge against which they are cut off. As one set of forms is withdrawn, the next set is brought into position, automatically, for the imprinting of the first line of the new bill.

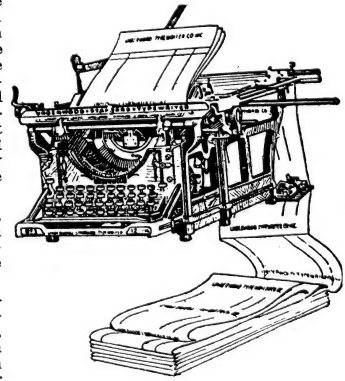
Two separate sets of forms may be used interchangeably on the same machine; the carbon blades and interleaving device of one form being removed from their place at the rear of the machine, when the other set is being used.

Prices: See schedule at end of descriptions, in section Bookkeeping Machines.

## UNDERWOOD FAN FOLD BILLING MACHINE

Made by the Underwood Typewriter Company. General offices, 30 Vesey Street, New York City. Sold by their own sales force.

A combination of an Underwood No. 3 typewriter with a device for feeding and inter-leaving carbon paper between each copy of continuous fan folded or inter-folded forms, for the writing of bills, invoices or other forms requiring many copies. The typewriter differs from the standard Underwood Model No. 3-12" or No. 3-14" in that the platen is mounted in a frame to permit it to be released, raised and tilted forward to insert and remove the forms.



A frame extending from the rear of the typewriter, the height of the platen, supports a carriage on which blades to which the ends of carbon paper sheets are attached, are mounted, so as to inter-leave the forms from right and left. This carriage has a forward and backward movement; the top section is removable and interchangeable to permit different kinds of form sets to be used intermittently without the necessity of preparing (by inter-leaving) the carbon sheets each time.

The supply of bills or other forms, is contained in a shipping carton in which such forms are furnished, located on the floor or any place to the rear of the machine.

The first forms having been interleaved with carbon paper (by the insertion of blades between each form), the end of the strip of forms is drawn forward under the platen. The platen is dropped, automatically locking in position. The bill is written in the usual way. When finished the platen is raised, releasing the pressure on forms and carbons. The rear carriage is pushed back (by a handle mounted on it) carrying with it all car-

## UNDERWOOD FAN FOLD BILLING MACHINE—continued

bon sheets to a distance adjustable to bring the loose ends of the carbon sheets to the correct position for the next bill. At the same time, the top of the form is drawn forward, by the operator, to the stop on a gauge adjusted to align the perforations between the form sets with a cutter located on the typewriter carriage. If desired, the forms may be slit at the sides during this operation. All forms are then torn off, the platen is dropped back into position and the next set of forms is in position for typing.

The original length of carbon sheets is 24 inches. When fresh carbon is desired, the used portion only is torn off and the rear carriage adjusted accordingly. Only a few inches at the loose end is used.

### Models and Prices

Model No. 3-12", Pica—Gothic, capitals only (shiftless).....$222.50
Model No. 3-12", Pica—Gothic, with upper and lower case..... 227.50
Model No. 3-16", Pica—Gothic, capitals only (shiftless) ..... 237.50
Model No. 3-16", Pica—Gothic, with upper and lower case..... 242.50
Continuous form billing device for accounting machines..... 125.00

## UNDERWOOD CONDENSED BILLING MACHINE

The condensed billing machine writes the bill and sales sheet (as many copies as are required) at one operation. A feeding device, attachable to any Underwood accounting machine, provides for the rapid and accurate insertion of the bill with perfect registration of the sales sheet, and condenses the entries on the sales sheet so that the space taken up on the invoice by the printed headings may not be lost. The sales sheet may be provided with columns for distributing or classifying the sales.

## UNDERWOOD BILLING AND ACCOUNTING MACHINE

For work requiring the adding or subtracting of typed amounts (quantities or price), an Underwood computing machine equipped with a continuous form billing device will be supplied. Such machines will compute the totals of each individual invoice, subtracting discounts, allowances and other deductions, show net amounts, and, if desired, accumulate a grand total throughout the day of any or all factors, such as a grand total of all invoices and separate totals of discounts, allowances, etc.

*The book you are now reading is the only one of its kind. It includes all machines without a penny of cost to the manufacturer. You can, therefore, understand why it can afford to be neutral.*

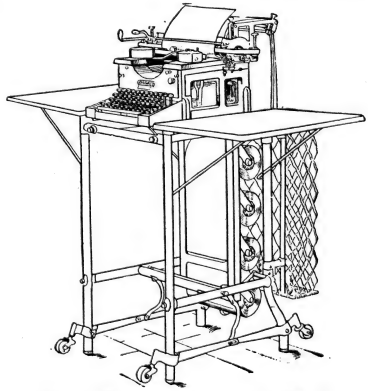
# UNITED (UARCO)
# HAMILTON
# ROLL PAPER TYPEWRITER ATTACHMENTS

Made and sold in the West by the
United Autographic Register Company,
2316 West 43rd St., Chicago, Illinois;
in the East by the
Hamilton Autographic Register Company,
Hamilton, Ohio.

Attachments for all standard makes of typewriters for the supply and feeding of forms in multiple copies for billing, etc.

Revolving hubs on which paper in from one to six rolls is carried, are mounted on a frame, and, from regular spacing controls on the typewriter, feed the forms through special feed rollers. Auxiliary typewriter ribbons, one for each copy desired, run between the forms, eliminating the use of carbons.

The construction is self contained. The frame is mounted on a track to move back and forth with the carriage. The entire device may be detached from the typewriter when its use is not desired.



Royal Typewriter with Style C Attachment

## Models and Description

Model A-O—A simple one-roll equipment.

Model A—For three rolls, furnishing original, duplicate and triplicate copy.

Model C—Equipped with stand, provides one to five copies.

Model D—Applied to Underwood Billing Typewriter only. Uses carbon paper for copies (is not equipped with auxiliary typewriter ribbon feature).

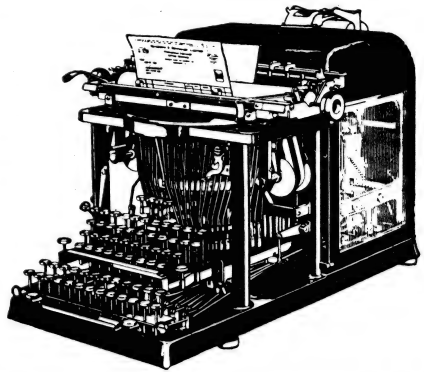
Prices are nominal when a quantity order is placed for rolled paper forms to be used with the devices.



Underwood Typewriter with Style D Attachment

## BURROUGHS MOON-HOPKINS

Made by the Burroughs Adding Machine Company. General offices and factory, Detroit, Michigan. Sold by special representatives through branch offices in all principal cities.



This machine is a combination of a typewriter having a standard keyboard, with an adding, subtracting and multiplying mechanism, all contained in the one unit. The typewriter section can be used independently of, or in conjunction with, the computing mechanism.

It is designed particularly for the production of invoices complete. It handles eighth, tenth and decimal fractions as well as whole numbers. The name and address of the customer, quantities and descriptions, are typed by the typewriter section and added, subtracted or multiplied amounts are listed, totalled and computed by the computing mechanism. All totals, differences and products are printed directly from the computing mechanism by depressing a result key; they are not copied by the typewriter section.

In writing an invoice the typewriter section is used to insert the name of the customer, quantities and descriptions. The computing mechanism, operated from a separate keyboard, handles all additions, subtractions and multiplications.

Several columns may be listed, depending upon the model, as determined by the number of registers with which each machine is equipped, and the several totals carried in the machine at one time may be printed as desired. While the invoice is in the machine, the extensions may be figured and the price shown by items, at the same time accumulating, and later furnishing, a printed total, of all items. Discounts, meanwhile, may be computed, printed and subtracted, and the net total shown.

In multiplying, to produce extensions, fractions in either price or quantity are computed with the same facility as whole numbers. If no discount is to be figured, the extension may be printed in its correct column on the completion of the multiplying operation. When a discount is to be deducted the gross amount may be held in the machine without printing, the discount computed and deducted, and the net amount only or both the gross and net amounts, imprinted.

The wide range of applications possible on this machine can perhaps be better determined by the following description of its construction, operation and key arrangement:

### Construction

The typewriter section is a single case (for writing capital letters only), blind printing typewriter, having a hinged platen, raising the same as on a Model No. 6 Remington typewriter. The typewriter section is used for typing all descriptive matter.

## BURROUGHS MOON-HOPKINS—Continued

The computing mechanism operates independently of the typewriter mechanism. It is controlled from a separate keyboard and all printing is done by a separate set of type bars positioned under the platen at the printing point.

The accumulating mechanism actuates registers arranged as follows:

Front registers, of which there may be any number from one to five (according to the model), are mounted within the machine and slide on a bar to operating position as they are selected, either by a manual control or by stops, actuated by the movement of the carriage.

The rear register, is mounted in back of the front registers, and does not move. It is always in position to receive amounts transferred from any front register, or the multiplier-subtractor (described later) or direct from the set up on the amount keyboard.

The multiplier-subtractor acts as a medium to hold amounts to be multiplied or amounts to be subtracted.

### Functions of the Front Registers

The front registers will receive, add and store, individually but not collectively, amounts introduced into them by depressing the numeral keys to the left of the lower keyboard. Each operates independently of the other and can only operate when it is in position. An indicator located on the right of the front of the machine, denotes which of the registers is in operating position. None of the registers can be seen by the operator and the accumulated totals are not visible except by printing. Any of the front registers when moved to operating position, will receive a total transferred from the rear register, and will, likewise, transfer any total held in them, to the rear register, eliminating it or continuing to store it in the register making the transfer. Thus, an amount may be introduced into the rear register direct from the keyboard and then transferred to a front register and still remain stored in the rear register. Items as they are introduced into any register, print automatically and totals and subtotals can be printed at any time by the depression of a key.

### Functions of the Rear Register

The rear register may have amounts introduced into it direct from the keyboard, the same as a front register, but its principal use is as a transfer medium for receiving an amount from any front register, or the multiplier-subtractor and transferring it to another front register or into the multiplier-subtractor. It will also print any total held in it, direct, without transfer to any other register. The rear register has an important function in subtraction.

### Subtraction

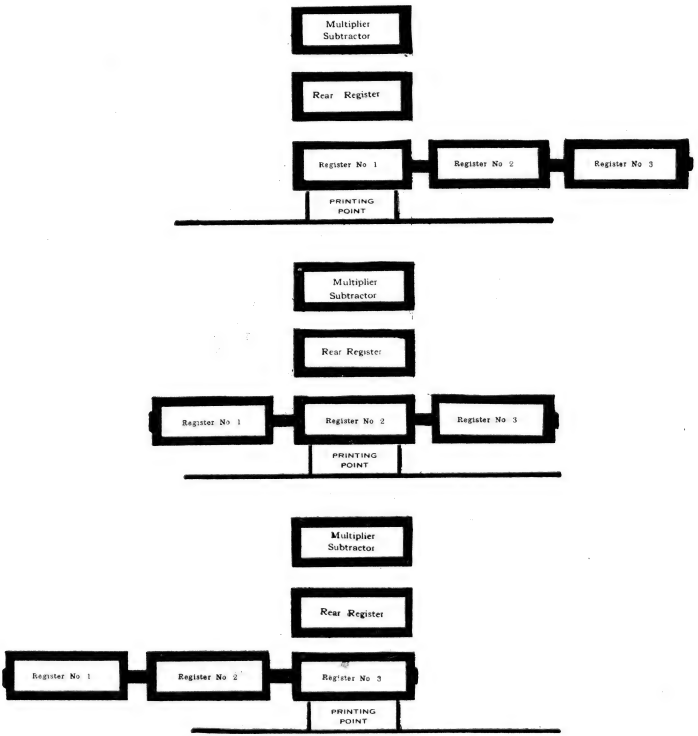
The amount from which the subtraction is to be made is introduced either direct from the keyboard or by transfer from any other register, into the rear register. The smaller amount (the amount to be subtracted), is introduced into the multiplier-subtractor, which as before stated, is a holding medium only, and is not really a register. When the subtract key is depressed, the subtraction is automatically made, leaving the balance in the rear register from which it can be imprinted direct, or introduced for storage or printing in any of the front registers.

### Multiplication

The amount to be multiplied is introduced from any other register or direct from the keyboard, into the multiplier-subtractor. The numeral keys on the right side of the lower keyboard are then depressed in the

(Continued on page 430)

## BURROUGHS MOON-HOPKINS—continued




The above illustration is intended to show the arrangement and relative positions of the Front and the Rear Registers and Multiplier-Subtractor on a Burroughs Moon-Hopkins Billing Machine equipped with three Front Registers.

In the first position, Register No. 1 is at the printing point, in position to operate. The successive movements of Registers No. 2 and No. 3 to operating position, are shown in the second and third illustrations.

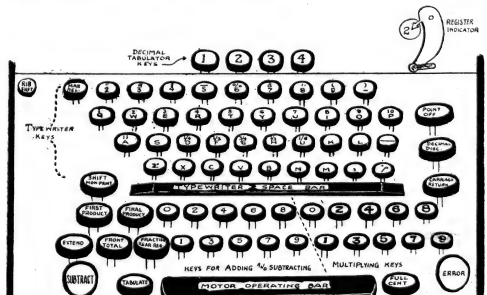
The Rear Register and the Multiplier-Subtractor are always in position, to operate as desired by the depression of control keys on the keyboard.

## BURROUGHS MOON-HOPKINS—continued

order in which they occur in the amount to be multiplied. The machine automatically multiplies the amount held in the multiplier-subtractor by the amount represented by each key on the keyboard. Each key is depressed but once. A device operated by a key on the keyboard, functions to automatically point off the proper number of decimals in the product. The product at the end of the multiplication, is in the multiplier-subtractor and can be printed either direct or transferred into the rear or any front register. Depressions of the multiplier keys are not recorded. There is no record to indicate at the end of the transaction, which keys were depressed.

After a multiplication or any other function of the machine involving decimal or common fractions, (eighths or tenths) leaving a total, remainder, or product that is part fraction, the depression of the "full-cent" key adds to or subtracts from the fraction to print the nearest whole number.

### Functions of Control Keys




It will be noted in the accompanying illustration, that this machine is equipped with two keyboards. The four rows in the upper set are the typewriter keys, used for typing descriptions. The four tabulator keys immediately above the typewriter keyboard, are used in connection with the typewriter keys. The typewriter space bar separates the two keyboards.

The lower keyboard controls the computing mechanism. The numeral keys to the left are for setting up amounts to be introduced into the registers. The numeral keys to the right, are used only to actuate the multiplier. The motor bar operates the motor to carry into the machine, amounts set up on the keyboard. The carriage return key causes the carriage to return to the right and to space up one line, automatically.

The **Decimal Discount Key,** also known as the **Point-off Key,** points off one place in a product each time it is depressed, eliminating the right hand figure and moving the decimal point one place to the left.

The **Eliminating Key** permits a number to be printed but not added.

The **Error Key** is used to restore any key depressed in error.

The **Extend Key** when depressed after an amount has been set up on the keyboard, introduces such an amount into the multiplier-subtractor. If desired, the amount so extended into the multiplier-subtractor can at the same time, be introduced into a front register or by the simultaneous depression of the Front Total and Extend Keys again, any amount in a front register may be printed and extended into the multiplier-subtractor.

The **Final Product Key** clears the multiplier-subtractor and the rear register, printing the amount that is in the rear register and transmitting it to a front register.

## BURROUGHS-MOON-HOPKINS—continued

The **First Product Key** is a total key for the rear register. It does not transfer the product to the front registers and does not clear the multiplier-subtractor. It is used to correct an error made in multiplying by the wrong multiplying key and to show the amount of a discount. If desired, the first product key can be made to clear the rear register and transfer the product to a front register without disturbing the amount in the multiplier-subtractor. This feature is desirable for pro-rating to accumulate successive multiplications of the same amount.

The **Fraction Key** is used to print and add a fraction. The fraction key is held down and the key representing the fraction is depressed. This prints the fraction and adds it in the first front register, which is the only front register which will accommodate fractions. The rear register and multiplier-subtractor, also accommodate fractions.

The **Front Total Key** is used to print the total and clear any front register. It can also be used as a sub-total key without clearing the register. The **Front Total and Extend Key,** operated together, prints an amount in the front register and extends it into the multiplier-subtractor, clearing the front register. The **Front Total and Rear Register Key,** operated together, prints an amount in the front register and extends it into the rear register, clearing the front register.

The **Full-cent Key** is used to automatically add to, or subtract from, a fraction in the quantity or price, to print the nearest full cent as a whole number in the total.

The **Line Key,** when depressed, prints a line five spaces long.

The **Rear Register Key,** when depressed, introduces amounts set up on the keyboard into the rear register, or when used in conjunction with the front total key, it transfers an amount from a front register to the rear register.

The **Register Indicator** shows which of the front registers is in operating position.

The **Ribbon Shift Key** shifts the ribbon to cause any amount to be printed in red.

The **Shift Key** is not universal in its scope as on an ordinary typewriter. This machine has capital letters only, but some of the type bars have special characters that print when the shift key is depressed.

The **Subtract Key** functions to cause an amount that has been introduced into the multiplier-subtractor, to be subtracted from an amount held in the rear register. The difference is printed by the depression of the first and final product keys.

### Models and Prices

Model 7402, without multiplier-subtractor section, and for adding and listing whole numbers only; equipped with 1 Front register having listing and printing capacity of 8 places and totaling capacity of 10 places.
Rear register, having listing and printing capacity of 9 places and totaling capacity of 10 places. 10″ carriage. Electric drive with motor returned carriage mechanism.

Tabulator.

Price .....$650.00

## BURROUGHS MOON-HOPKINS—continued

### Models and Prices—continued

Model 7202, for adding and listing, subtracting and multiplying, one-tenth or one-eighth fractions, as well as whole numbers; equipped with 3 Front registers, having listing and printing capacity

| | Reg. No. 1 | Reg. No. 2 | Reg. No. 3 |
|---|---|---|---|
| With 1/10 fractions... | 999,999.99-9/10 | 999,999.99 | 999,999.99 |
| With 1/8 fractions... | 9,999.99-7/8 | 9,999.99 | 9,999.99 |
| Totaling capacity | | | |
| With 1/10 fractions... | 9,999,999.99-9/10 | 9,999,999.99 | 9,999,999.99 |
| With 1/8 fractions... | 99,999.99-7/8 | 99,999.99 | 99,999.99 |

Rear register, having the same listing, printing and totaling capacity as each register with which it is used.

Multiplier-subtractor section, having the same listing, printing and totaling capacity as each register with which it is used.

12″ carriage.

Electric drive with motor returned carriage mechanism.

Tabulator.

| | |
|---|---|
| Price, equipped to handle one-tenth fractions | $ 950.00 |
| Price, equipped to handle one-eighth fractions | 1,000.00 |
| Extra for each additional front register, (either model) | 50.00 |
| Extra for automatic tabulator mechanism and counter control mechanism | 125.00 |
| Extra for 15″ carriage | 15.00 |
| Extra for 18″ carriage | 25.00 |
| Extra for condensed billing device | 25.00 |
| Extra for Pica type | 25.00 |

Extra for high back on carriage, 12″, $15.00; 15″, $20.00; 18″, $25.00

Extra for brass platens.....12″, $15.00; 15″, $20.00; 18″, $25.00

On machines designed to handle amounts in whole numbers only:
When equipped with five front registers, the maximum capacity of each register is eight places.

On machines designed to handle amounts in whole numbers and one-tenth fractions:
When equipped with five front registers, the maximum capacity of each register is seven places of whole numbers, plus one column for fractions in No. 1 front register, rear register and multiplier-subtractor.

On machines designed to handle amounts in whole numbers and one-eighth fractions:
When equipped with five front registers, the maximum capacity of each register is five places of whole numbers, plus one column for fractions in No. 1 front register, rear register and multiplier-subtractor.

## ELLIOTT-FISHER

Made by the Elliott-Fisher Company, General Offices: 343 Madison Avenue, New York City. Factories: Harrisburg, Pennsylvania. Sold by their own sales force, through branch offices in principal cities throughout the country.

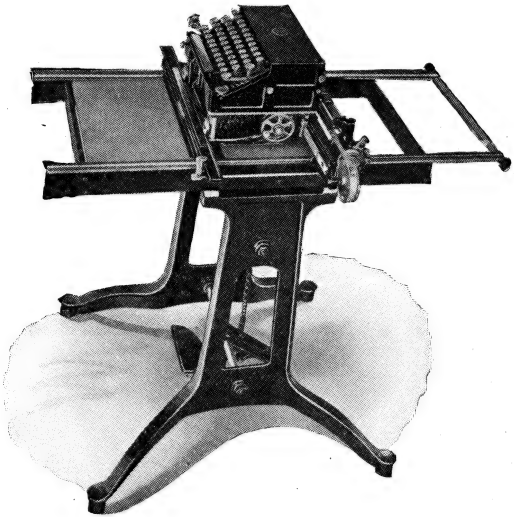
The Elliott-Fisher Company manufactures both writing and accounting machines. Both the writing and accounting machines are of various sizes and capacities, designed to handle all classes of records. The Accounting machines add and subtract in any number of columns up to and including 29. The adding and subtracting is accomplished automatically as the figures are written.

## ELLIOTT-FISHER—continued

Writing machines are made in three styles:

(1) Writing Machines for cut forms.
(2) Automatic Feed Machines for continuous forms.
(3) Book Recording Machines for writing in bound books.

(Accounting and Bookkeeping Machines are described in detail under Bookkeeping Machines.)



The basic principle of all Elliott-Fisher machines is the flat platen or writing surface. This is a smooth slab of rubber composition upon which the paper is laid and held in a flat position by pressure exerted against metal flanges on either side by the flat writing surface which is raised or lowered with a foot pedal. This pressure holds all papers in perfect registration and in an absolutely fixed position. Forms of any length whatever, not exceeding 17" in depth, may be accommodated.

The typing mechanism is mounted upon a carriage and moves from left to right across the writing surface, the type bars striking downward upon the platen. Vertical line spacing may be adjusted to any desired distance.

All machines are constructed in units, consisting of

The writing head, which is the typewriter mechanism, and can be used interchangeably on any platen;

The platen, made in distinctive models for writing on cut forms, in bound books, or on continuous forms;

The pedestal or base, a desirable although not an indispensable part of each equipment.

## ELLIOTT-FISHER—continued

### The Typing Mechanism

The keyboard is standard, the keys being arranged in four rows, as they are on any standard typewriter.

The printing or typing mechanism is mounted on a frame, on ball bearings, and has an automatic lateral motion. The frame is in turn mounted on a track at each side of the platen, and has a vertical or line-spacing motion. Controls are provided for both motions. (It will be noted that the printing mechanism, containing the typebars and keyboard, of this machine, moves as does the carriage on an ordinary typewriter, and in addition, has a forward and backward motion to provide line spacing, usually accomplished on a standard typewriter by feeding the paper around a cylindrical platen. The paper on this machine does not move throughout the entire typing operation.)

Machines may be equipped to write capital letters only, having what is known as a single-arm type-assembly; or both upper and lower case letters, having what is known as a double-arm type-assembly; or may be equipped with two styles of type faces, such as pica type for all ordinary uses, and pin point type for writing checks, etc. The latter arrangement is known as the hybrid type-assembly.

## ELLIOTT-FISHER BOOK WRITING MACHINE

This machine is used to typewrite on the pages of bound books. It is a combination of any style of Elliott-Fisher writing machine head, and a flat platen with a special holding device to clamp the book, to secure an even writing surface. It is adaptable for the recording of deeds and other public documents, or in any circumstance requiring recording in books having regular sewed or loose leaf bindings. It may also be used to write on any kind of loose sheet or form.

Prices: See schedule at end of descriptions in section Bookkeeping Machines.



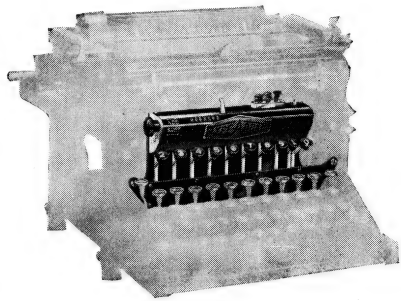
## REMINGTON

See Typewriters; also Bookkeeping Machines.

## TYPE-ADDER

Made by the Type-Adder Corporation. General offices, Woolworth Building, New York City. Sold by their own organization.

This device designed to be fitted to all standard typewriters, is a compact adding and subtracting machine, developed for use in billing, bookkeeping and special form work.



It contains a set of totalizer dials actuated from an auxiliary set of keys, which when the device is in position, forms a fifth row of keys on the standard typewriter keyboard. It does not interfere with the regular use of the typewriter for correspondence purposes and may be instantly attached or detached if desired, without mutilating the typewriter, being held in place by but two screws.

In operation, the amount to be added is written, as in regular typewriting practice, except that the auxiliary set of numeral keys provided on the Type-Adder are struck instead of the regular keys on the typewriter. Amounts are automatically added as they are written.

A control lever positions the mechanism to add or subtract. Subtraction is direct—complementary numbers are not used. Items may be written in any of the color combinations usual in typewriting and may be vertically or cross-added or positioned anywhere on the sheet. Clearing is accomplished while printing the total by subtracting the amount out of the dials.

### Models and Prices

Made at present in one model only with an attaching member made especially for the Underwood, Remington, Royal or Woodstock typewriters. Price ..... $60.00

Attaching members for other makes of typewriters will be ready in the near future.

*After you read any advertisement—of any business machine in any magazine or other medium, complete your information by referring to the DIGEST.*

# Bookkeeping Machines

Mechanical bookkeeping is the utilization of machines to do what was accomplished formerly by pen and ink and mental processes, but with these important advantages:

1—Legibility and speed are afforded far beyond that possible by pen methods. The substitution of mechanical processes for mental labor, allows of a sustained speed that provides an unquestionable increase in daily production.

2—The possibility of error is greatly reduced; machine precision minimizes and controls the human element, and safeguards against mistakes. If the operator strikes the right keys, the correct amount is printed and added or subtracted, and only amounts printed can be added or subtracted. When errors are made, they are more easily located than when pen methods are used.

3—Amounts are added or subtracted at the same time that they are written, thus completing the entire work (except the proof), simultaneously, with the posting of the last item.

4—All work is completed day by day, with a daily balance afforded of each account and all control accounts. The credit and collection departments can be furnished instantly with the balance of any account.

5—The manifolding properties of each machine make possible the production of several related forms in one writing operation, such as ledger and statement, ledger and proof sheet, etc.

6—Proof of accuracy is furnished, affording a dependable check on all operations, and providing a balance (according to the methods used) of each account at the completion of each posting and/or monthly balances of each account, together with similar daily or monthly balances of control accounts.

All bookkeeping or accounting is essentially the same, in that all methods follow definite established rules. An old balance, plus a debit or minus a credit, equals a new balance; for each debit there must be a credit and for each credit there must be a debit. Bookkeeping machines do not change the principle of accounting; they simplify it and enhance the positiveness of results by uniform handling of details.

The main difference, therefore, between bookkeeping machines, is principally in their design, hence in their detail of operation to secure conventional results. The construction of some machines lends itself to results different from that possible on others. The following pages have been prepared with a view to pointing out these differences and the methods of providing proof of posting, with a view to suggesting, through the descriptions and illustrations, the mechanical operations of each machine, rather than individual applications. Provided with a knowledge of the functioning of each machine, the reader should be in a position to judge its capabilities, and thus determine its suitableness as applied to his particular requirements.

In other words, the information intended to be conveyed is the same as that relied upon by a salesman in selling such equipment. The salesman knows the functioning possibilities of his machine, therefore feels capable of demonstrating it on any application required by the needs of his prospect. Whereas a salesman, naturally, will dwell upon and emphasize the merits of his own machine, the prospective purchaser and the present user, can now know full, disinterested particulars, regarding each machine that is a factor on the market.

## Functions of Bookkeeping Machines

Irrespective of the individual application, the functions of bookkeeping machines divide themselves roughly as follows:

### Posting

**Accounts Receivable**
Customers' Ledger
Customers' Statements
Sales Distribution
Control Accounts

**Accounts Payable**
Purchase Ledger
Commission Ledger
Voucher System
Invoice Register
Check Register
Remittance Advice
Control Accounts

**Expense Ledger**
Distribution

**Stock Records**

**Payroll**
Distribution

**Cost Accounting**

### Proving

**Each Entry**
That the amount is correct
That the posting has been made in the right column
That distribution is correct and complete

**Old Balances**
That they have been properly picked up

**New Balances**
That they have been properly extended

**Debits**
That postings equal total of invoices

**Credits**
That postings equal total of cash, allowances, discounts, etc.

### Controlling

Totals of all general ledger accounts, individual ledgers, etc., coordinating all accounts under master or several subsidiary controls.

## Classifications of Bookkeeping Machines

Of the machines now factors in the market, there are three distinct types:

1—Combination typewriter, adding and subtracting machines
- (a) With individual column registers
- (b) With individual column registers and a cross computing register
- (c) With a single main totalizer
- (d) With duplex (2) main totalizers

2—Adding-subtracting machines
- (a) Direct subtracting
- (b) Complementary subtracting

3—Adding-subtracting-multiplying machines.

**Cross Computing or Cross-footing**

is a term applied to such machines as are capable of accumulating or subtracting amounts as they are posted at different positions across a form. Combination machines are equipped for both vertical and cross computing, rendering individual vertical column totals as well as a total of a cross computation.

**Vertical Computing**

is a term applied to bookkeeping machines having individual registers to add or subtract amounts posted in vertical column formation. Machines with a single counter, of course, compute amounts of vertical as well as

cross postings. They provide but one total, however, and therefore, cannot provide column totals while they are accumulating across the sheet.

## Machine Bookkeeping Terms

To better acquaint the reader having but an elemental knowledge of machine bookkeeping, the following explanations of terms used herein to describe machines, are offered:

**An Old Balance**
is the amount appearing as the amount due or owing on a ledger account previous to a new posting. The "pick-up" of an old balance is the introducing of such an amount into the accumulator (or register) of the machine, and to which a debit posting is added or a credit posting is subtracted.

**A Debit Posting**
is the introduction into the accumulator (or register) of the machine, and the printing of an amount representing a charge. A debit posting is added in the accumulator (or register), while

**A Credit Posting**
is subtracted from the accumulator (or register) and represents the amount of a credit.

**A New Balance**
is the amount due or owing on a ledger account at the completion of the current posting.

**A Credit Balance**
is the result provided after posting a credit item which exceeds in amount the total of old balance and/or debit posting. The method by which different machines show or print a credit balance on a ledger sheet ordinarily carrying a debit balance, is explained in the description of each machine.

**A Daily Balance**
is the functioning of the machine to provide by the posting of each charge or credit, an up-to-the-minute balance of each customer's account.

## Proving Mediums

**A Proof or Audit Sheet**

is a carbon record on a single sheet, of postings made on ledger or other forms. Any or all factors posted on the ledger sheets may be made to appear on the proof or audit sheet. The different machines have means to line space the audit or proof sheet, independently of the original posting sheet, so that the record of the several ledger postings appear on the audit sheet in uninterrupted sequence.

**A Tally Roll Strip**

provides for the imprinting, either through a carbon or on the back of a transparent tissue strip run in front of the ribbon, items posted in certain definite column positions. Amounts so listed are totalled at the end of the run, to be checked against predetermined totals or other proof controls. Some machines automatically provide the total of all items entered on the tally roll.

**The Offset Method of Proof**

is the placing of ledger sheets a slight distance out of marginal alignment, in the tray or binder in which they are held beside the operator during posting. Affected accounts are offset, inactive accounts are left in normal position and at the end of the run, the old and new balance proof is taken, consisting of listing and totaling separately, the old and new balances on the offset sheets. The difference between the totals should equal the total amount of debit or credit postings.

**A Predetermined Total**

of any item or group that is a factor in posting, is usually obtained by listing, adding and totaling such items from the original posting mediums, (sales tickets, invoices, etc.), before beginning to post, so that at the end of posting the list and total may be checked against the posted items.

In the larger concerns where the established method of proof is by the comparing of predetermined totals, the duty of comparing and reconciling the totals with the postings, is assigned to a head bookkeeper or clerk, known as a "Control Clerk."

The totals when held against each operator or against each ledger by the Control Clerk, provide what is known as a Sectional Control; when held against the entire postings of all ledgers, it is known as a Master Control.

## Posting Methods

In the posting of accounts receivable—probably the most extensive application of machine commercial bookkeeping—there are three general systems or plans:

**The Unit Plan**

The daily work is confined to ledger posting and securing a daily balance and proof. Statements, usually of the open item type, are made at the end of the month, as was customary with pen and ink method.

**The Dual Plan**

provides for the posting of ledger sheets and statements in separate runs, usually by different operators. The usual method is to post totals only to the ledger, from sales tickets, orders or other original posting mediums,—the machine at the same time listing on a tally strip or proof sheet, one, or preferably, all posted factors (old balances, debits, credits, new balances). Machines equipped with individual totalizers accumulate the total of such items by column groups, which totals may be imprinted at the bottom of the columns on the tally strip at the end of the run.

When postings are completed, the listed and totalled amounts on the tally strip are used to check against the items posted on the second (billing or statement) run. The charges or credits are invoiced or posted to the statement in itemized form, (it will be noted that on the first run the totals only were posted), the tally strip is also run and totalled, so that it may be checked against the tally strip record of the first run.

If the totals of both tally strips are in agreement, the postings are correct. If not in agreement, thetally strips are compared item by item until the error is found. The advantage of this plan lies in the almost positive proof which it affords. If either the posting operator or the billing operator, enters an item to the wrong account, there will be a difference between the balance picked up by the two operators, and the discrepancy will show in the totals of the old and new balances on the tally strips. A comparison between the poster's and the biller's tally strips will immediately localize the account incorrectly posted.

**The Combined Plan**

provides for the posting of the ledger and statement by the one operator, at the one time. The design of some machines requires that one of these forms be a carbon copy of the other, special feeding devices being built to handle the two sheets.

Other makes provide a split platen, the ledger sheet being inserted in one end of the carriage and the statement form in the other, both feeding vertically concurrently. The lateral movement of the carriage is controlled by automatic tabulating features, which operate to cause items posted to the ledger sheet to be repeated automatically on the statement form, thus, accomplishing posting of the two forms by a single set-up of each item.

## Details of Operation

The charts shown on the following pages are intended to explain the operation of each machine in the handling of a standard posting, that is to say, the pick-up of an old balance, the posting of a debit, a credit, and the extending or posting of a new balance. It is obviously impossible to describe the various applications by lines of business or classes of work.

The reader should understand that the arrangement shown for each machine is not, necessarily, fixed. Standard models of practically all machines, may be arranged to post any of the factors in different column relation than that shown.

It should further be understood that the usual practice is to post debits in one run, and credits in a separate run; the posting of debits and credits in the same run is not customary, except in bank bookkeeping. However, in order to afford a more concise yet comprehensible and complete understanding of the entire workings of each machine, debits and credits are shown as posted in the same run. To form an idea of the operation of the machine when handling each factor in separate runs, it is only necessary to eliminate in the mind that part of the illustration referring to the credit (or if desired, the debit) item.

No attempt has been made to show the extent of descriptive postings that each machine provides in addition to posting of amounts. As will be seen in the comparative analysis of bookkeeping machines set forth on subsequent pages, machines of the typewriter-adding machine combination design will type any description, in addition to printing amounts. Machines of the strictly adding machine type will print descriptions, within certain definite limitations, such as abbreviatons for months and numerals for dates and folios, also a limited number of short, fixed descriptions of the nature of the transaction and some few other descriptions such as debit, credit, balance, etc.

## DETAIL OF OPERATION OF THE BURROUGHS BOOKKEEPING MACHINE

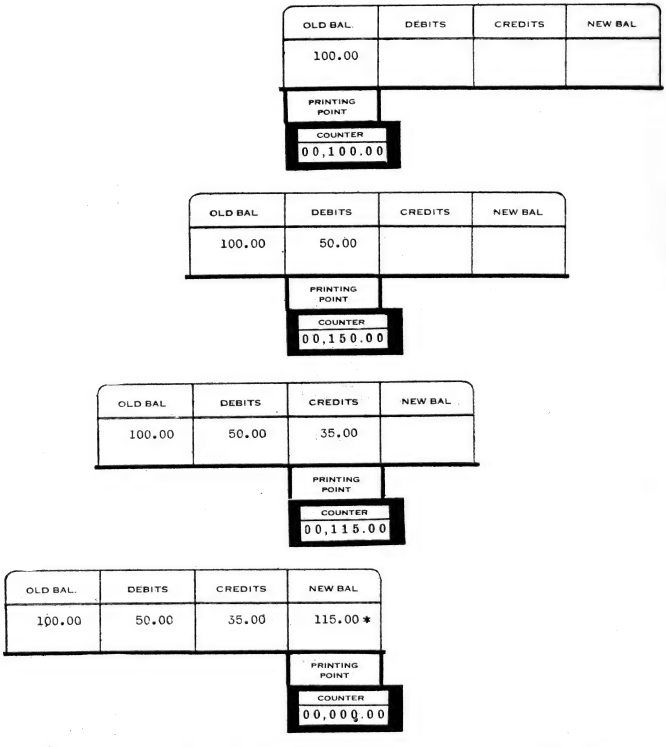
The Burroughs Bookkeeping Machine is a single counter adding machine, with a direct subtracting mechanism. The mediums to control the counter to add or subtract, are adjustable stops, set on a bar in the path of, and operated by, the travel of the carriage. A manual control on the keyboard is also provided.

The machine is motor driven, and the carriage may be equipped to be fully automatic in its tabulation, moving from column to column as each amount is posted, and returning automatically to the correct position for the posting of the first item in the next account.

Items (descriptions and amounts) are set up on the keyboard and are visible before printing. An error in the set up may be corrected at any time before the motor bar is operated. In addition to the imprinting of amounts, this machine will print (and when equipped with a special device, will repeat print, if desired) dates, folio numbers and special characters or abbreviations to describe the nature of the transaction.

In the first operation illustrated, the old balance column is at the printing point. The amount of the old balance is read from the ledger sheet (the amount entered as the new balance by the last posting to each account is the amount entered as the old balance with the next posting), and set up on the keyboard. When the motor bar is depressed, the machine operates, imprinting the amount and adding it in the counter. The carriage then

## BURROUGHS—continued



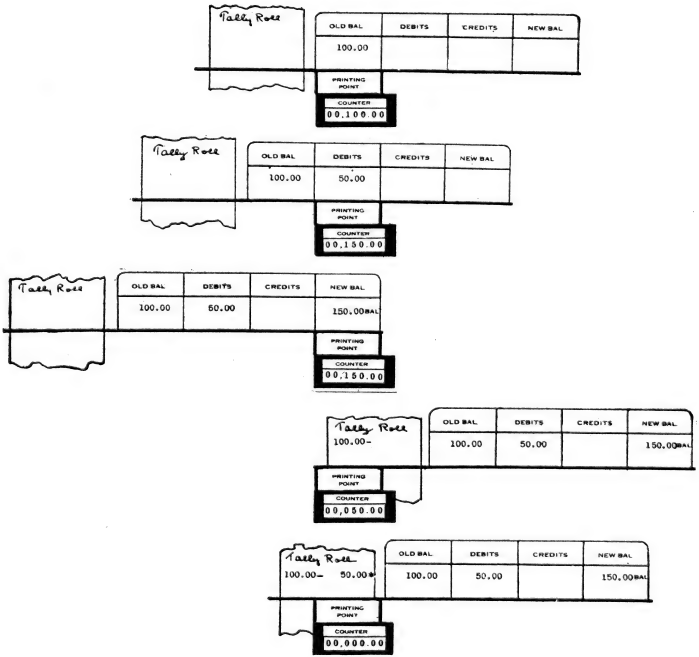

moves automatically to the next column position, shown as the second operation.

The amount of the debit is then set up on the keyboard, the machine again operated, printing the amount of the debit in its column, and adding it in the counter, to the amount of the old balance previously accumulated.

When the amount of the credit is set up and printed, the subtracting control functions to cause the amount to be subtracted out of the counter, the remainder representing the new balance, which, as shown in the fourth operation, can then be imprinted in the new balance column, the star proof of clearance being automatically imprinted opposite it.

Simultaneously with the imprinting of the old balance, the counter clears, leaving the machine ready for the next operation.

## DETAIL OF OPERATION OF THE



# BURROUGHS BOOKKEEPING MACHINE

## Operation With Tally-Strip Proof

The second illustration is intended to show the operation of the machine when the method of proof at present recommended by the manufacturers, for proving ledger postings, is used.

The operation of the machine, with the exception of the posting of the credit item which in this instance is eliminated, is the same as that shown in the previous illustration. When debits only are to be posted to any account, the machine automatically skips the credit column position, passing directly to the new balance column. When credits only are to be posted, the machine, in a similar manner, skips the debit column. This control is an adjustable cam action, at the rear of the machine, set by the operator before each run. The carriage of the machine with which this method is used is, however, slightly different.

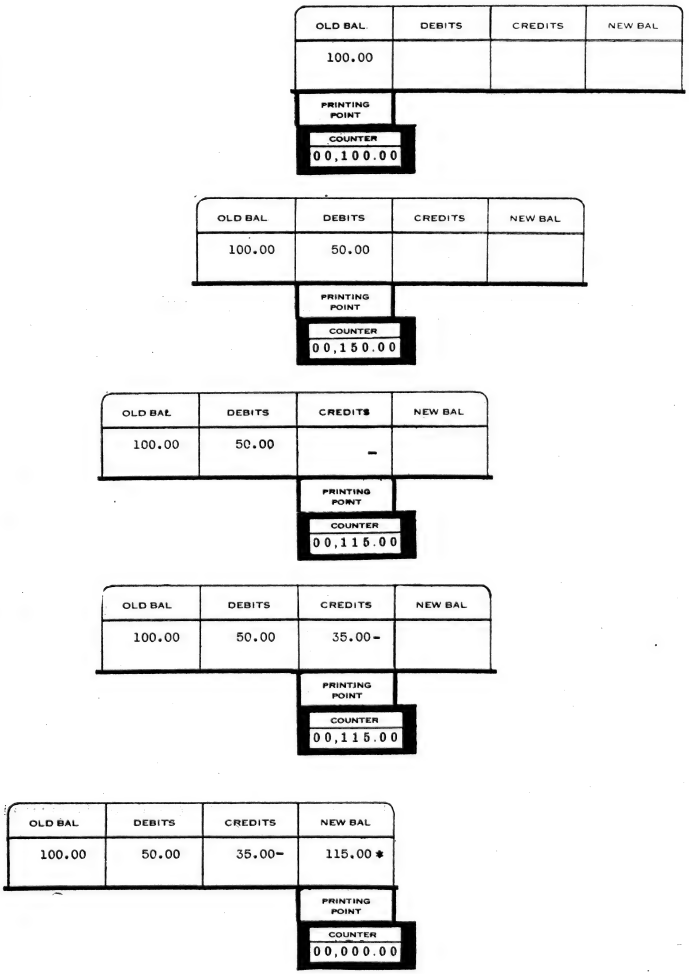
The platen is split, the tally strip being fed through the left end, and the ledger form through the right end of the carriage. The ledger sheet can be inserted and removed without disturbing the proof strip, which remains in the machine. The tally strip is not brought into use until after the new balance has been entered. The imprinting of the new balance is made as a sub-total, the abbreviation "Bal" appearing after it instead of the star proof of clearance. The amount remains in the counter.

Immediately after imprinting the new balance, the carriage automatically tabulates to bring the left side of the tally strip to the printing point. The amount of the old balance is again picked up by setting it up on the keyboard and operating the machine. At this point the counter is controlled by the subtracting stop, so that the amount of the old balance is subtracted from the amount in the counter. If the old balance has been picked up correctly, the amount remaining in the counter should be the amount of the debit posted.

The carriage then tabulates to bring the right side of the tally strip into printing position and the total key, when depressed, (manually or automatically), prints the amount remaining in, and clears the counter. The amount printed on the proof strip in this position is the same as the charge made to the account.

Comparison of the totals of the items on the right side of the tally strip, with the predetermined total of the posting media, proves, when the two totals agree, that the items were correctly posted. When the two totals do not agree, the strip is checked item by item until the error is located.

## DETAIL OF OPERATION OF THE



# DALTON BOOKKEEPING MACHINE

On the Dalton machine the printing point is stationary, and the counter is stationary. The form is inserted in the carriage, which moves along the printing point. The lateral movement of the carriage from column to column is automatic upon the completion of the posting in each column. Amounts are visible as they are printed.

In operation No. 1, shown in the illustration opposite, the old balance, when picked up and imprinted, adds in the counter. The carriage then moves to the next column position.

When in the second position, amount of the debit item, when posted, also adds in the counter.

The third and fourth positions illustrate a subtracting operation. When the carriage tabulates to bring the credit column into position to receive an item the amount of the credit, ($35.00), is set up as a complement (on the small or complementary numerals) on the keyboard. The construction of this machine provides for throwing in the nines to the left of the amount to be subtracted, automatically to complete the complement to the full capacity of the machine, through the depression of a "subtract" key on the keyboard, or from a stop actuated as the carriage comes into the credit column position. When the machine is operated, a non-print control functions to prevent the complement from printing, but does allow a minus sign to be made on the paper. The carriage remains stationary, until,

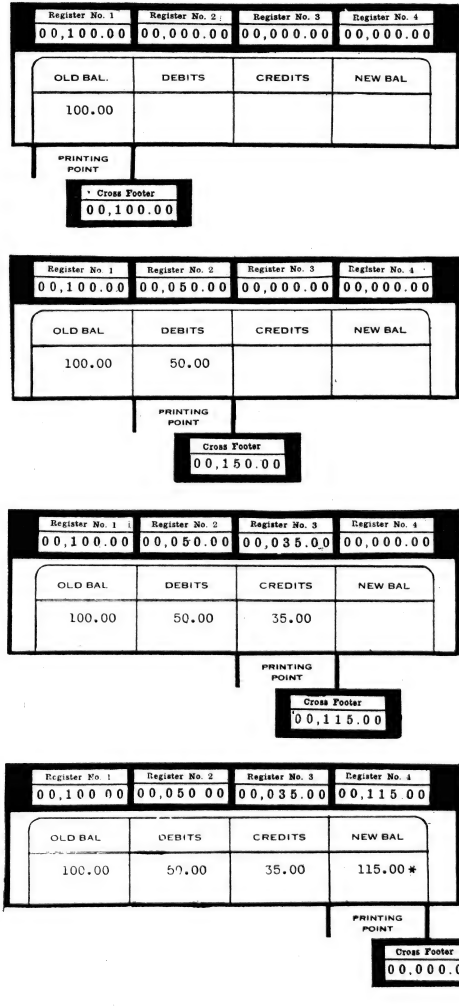
In the fourth operation the amount $35.00 is again set up on the keyboard, (or it may be held set up from the previous operation), and the machine operated with the non-add control engaged, allowing the amount previously subtracted to be printed but not introduced into the counter. It will be noted that the counter has not changed from the third to the fourth operation. The entire action has been in the printing.

In the fifth operation, a total is taken, clearing the counter and printing, automatically, the star proof of clearance after the amount of the new balance.

Proof of posting is secured by a tally strip listing made by means of a split platen of any or several posted factors made at the time of posting, and later when the posting run is completed, adding such lists on the machine to secure a total. The tally strip totals are compared with the predetermined totals of charges, credits, old or new balances. If both sets of totals are in agreement, it indicates that the postings are correct. If they do not agree, the tally strip and the list from which the predetermined totals were secured, are checked item by item until the error is found.

The off-set method of proof may also be used.

## DETAIL OF OPERATION OF THE ELLIOTT-




The Elliott-Fisher Universal Accounting and Bookkeeping Machine may be equipped with from 1 to 29 vertical computing adding-subtracting registers, mounted at the rear of the writing head, adjustable to operate when amounts are typed in columns for which they are set. A cross computing register (called in the illustration, the cross footer), is mounted to the right of the writing head, and moves with it at all times. The cross footer adds or subtracts amounts registered in vertical column registers, and computes the resulting balance. Amounts aded in a vertical column register may be made to subtract in the cross footer, and vice versa.

The mediums to control the cross footer to add or subtract are adjustable stops, set on a bar in the path of, and operated by, the lateral travel of the writing head. The difference in the design of the stop controls the action to add or subtract.

## FISHER UNIVERSAL ACCOUNTING MACHINE

Vertical computing registers add only, or subtract only, but cannot do both intermittently. The cross footer will add or subtract, as desired.

The forms are laid flat on the platen, and are stationary during the entire posting operation. The vertical computing registers are also stationary. The writing head and cross footer move to the printing point. A 10-key decimal tabulator provides the correct position in decimal order for each column. In addition to the printing of amounts, the machine will type any description.

Each numeral of each registered amount, is introduced into the registers as it is typed. Corrections are made by a counter entry, after the completion of the erroneous entry.

In the first operation, shown in the illustration, the writing head is moved to position to imprint the amount of the old balance, $100.00, in the old balance column, and as typed, the amount adds automatically in register No. 1, and also adds in the cross footer.

Moving the writing head to the debit column position, and typing the amount of the debit, adds the amount, $50.00, in register No. 2, and also adds it to the amount previously accumulated in the cross footer.

When the credit is typed, it adds in register No. 3, and automatically subtracts from the amount previously accumulated in the cross footer.

Tabulating to the new balance column, the operator reads out the amount shown in the cross footer at the end of the third operation, and types it. If the amount has been read correctly and typed correctly, the cross footer should clear and allow the operator to type the star character after the amount of the new balance. Simultaneously with the clearing of the cross footer, register No. 4 adds the posted amount.

The next account is posted in a similar manner; amounts registered in vertical registers (Nos. 1, 2, 3 and 4) adding to those registered by this posting.

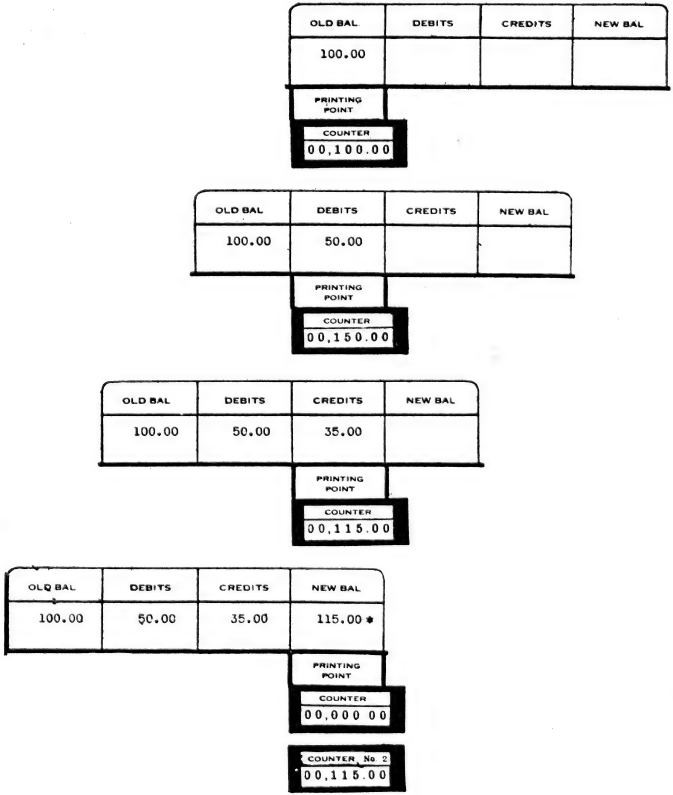
Thus, the column registers of the machine provide:

- a total of all old balances of accounts affected by posting, to prove the the correct pick-up of such balances;
- a total of all debit postings to check against the predetermined total of charges;
- a total of all credits posted, to check against the predetermined total of credits and allowances;
- a total of all new balances.

At the end of the run, a balancing entry may be made to the control sheet by reading out and typing. The total of old balances, plus the total of debits, less the total of credits, equals the total of new balances.

In sales distribution, expense distribution, etc., the total amount may first be introduced into the cross footer, and as the extensions are typed they are automatically added and totalled in the registers for each column, and subtracted from the cross footer. If the extensions have been properly and completely made, the cross-footer will clear at the completion of the distribution. The totals accumulated in the vertical registers may be entered at the foot of their respective columns.

## DETAIL OF OPERATION OF THE



# ELLIS BOOKKEEPING MACHINE

The illustration herewith is intended to present the functioning of a two counter direct subtracting machine. In addition to the imprinting of amounts, the combination adding-subtracting-typewriting machine will type any description. The machine without the typewriter section may be equipped with an automatically or manually operated non-add feature to imprint in certain selected columns, but not add, numerals, set up on the adding keyboard to represent bank ABA numbers, folio numbers, etc. Both types of machines may be equipped to imprint special short abbreviations or designations in connection with the imprinting of totals, such designations acting as sub-total or clearing signals.

The counters on Ellis machines are stationary. The form is inserted in the carriage which tabulates to bring the columns to the printing point.

In the first operation illustrated, the old balance column is at the printing point and the amount of the old balance, $100.00, is picked up (set up) on the adding machine keyboard. (It is not typed with the typewriter keys). When the machine is operated, the amount adds in the No. 1 or debit counter.

The carriage then automatically tabulates to the debit column position, shown in the second operation and the amount of the debit is set up on the adding machine keyboard, and when the machine is operated, is printed and added to the old balance in the counter.

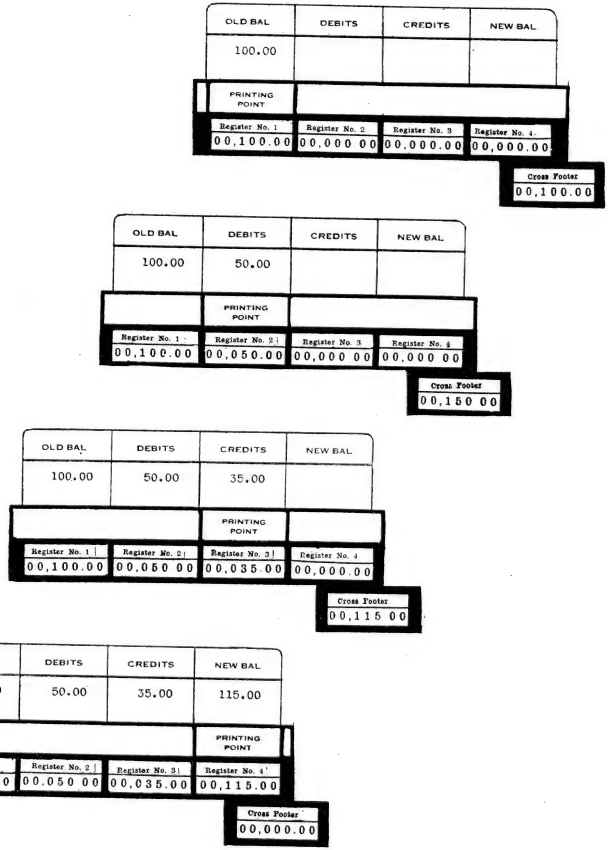
In the third operation, a credit is posted and simultaneously subtracted from the amount previously accumulated in the counter.

In the fourth operation, the depression of the total key and the motor bar (which operates the machine) prints the amount of the new balance, and clears counter No. 1, and at the same time, transfers the amount of the new balance into counter No. 2, which accumulates the total of all new balances during the run.

The machine may be arranged so that the transfer of an amount, other than the new balance, will be made into register No. 2 at any time during the posting operation. The general practice, however, is to accumulate a total of new balances as a checking medium to prove the correctness of postings.

A transparent tissue tape, threaded in front of the ribbon so as to receive the imprint from the back, may be used to list the postings of one or several factors, such as debit postings, credit postings, or pick-up of old balances. This tally record is then checked against a predetermined total of debits or credits, to prove correctness of postings.

## DETAIL OF OPERATION OF THE



## REMINGTON CROSS ACCOUNTING MACHINE

The Remington Cross Accounting Machine may be equipped with from one to thirty vertical computing, adding-subtracting registers, mounted on the front of and moving with the carriage, adjustable to any column position, so as to operate when amounts are typed in such columns.

A cross computing register, called in the illustration the cross footer, is mounted on the right end of the carriage and moves with it at all times. The cross footer adds or subtracts an amount added in the vertical column registers and computes the resulting balance. Amounts added in a vertical column register may be made to subtract in the cross footer and vice versa. The controlling mediums for adding and subtracting in the cross footer are adjustable stops, set on a bar in the path of, and operated by the travel of the carriage. The difference in design of the stop, controls the machine to add or subtract.

A manual adding or subtracting adjustment is also provided, as is a throw-off mechanism which disengages all registers to permit of using the machine as a typewriter only.

Vertical computing registers add only, or subtract only, but cannot do both intermittently. The cross footer will add or subtract as desired.

Forms are inserted in the carriage of the machine around the platen. The vertical computing registers move with the form in the carriage, being operative only at the printing point. A ten-key decimal tabulator provides the correct position in decimal order for each column. In addition to the printing of amounts, the machine will type any description. Each registered amount is introduced into the registers as it is typed.

In the first operation shown in the illustration, the old balance column is at the printing point and when the amount, $100.00, is typed, it adds automatically in register No. 1 and simultaneously in the cross footer. Tabulating to the debit column position, the amount $50.00 is typed and simultaneously added in register No. 2 and to the amount previously accumulated in the cross footer.

When the credit is typed, it adds in register No. 3 and automatically subtracts from the amount previously accumulated in the cross footer. Tabulating to the new balance column, the operator reads out the amount shown in the cross footer in the third position, and types it. If the amount has been read correctly and typed correctly, the cross footer will subtract and clear. If an error has been made so that the cross footer does not clear, the entire machine locks. Simultaneously with the clearing of the cross footer, register No. 4 adds the posted amount.

The next account is posted in the same manner, the amounts registered in the vertical registers No. 1, 2, 3 and 4, adding to those registered by this posting. Thus the column registers of the machine provide:

a total of all old balances of accounts affected by postings, to prove the corect pick-up of such balances;

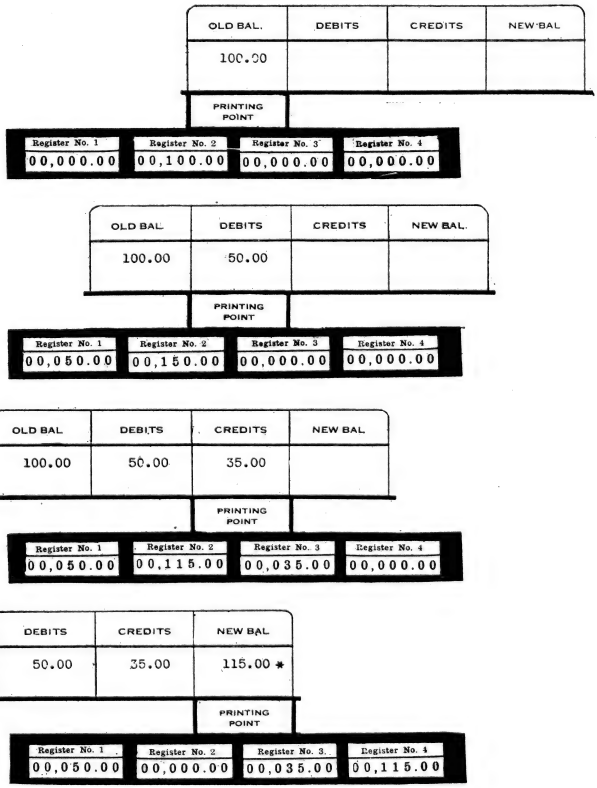
a total of all debit postings to check against the predetermined total of charges;

a total of all credit postings to check against the predetermined total of credits and allowances;

a total of all new balances.

## DETAIL OF OPERATION OF THE

The Underwood Bookkeeping machine is built in separate models having one, two, three, four, or five registers which are located in the front of the base and are stationary. Amounts are visible through glass panels. Any register may be controlled to add or subtract or to function as an active or cross footing register. The same register may be made to add amounts typed in one column and subtract amounts typed in another. At




Functioning of Machine with Recapping Method.

# UNDERWOOD BOOKKEEPING MACHINE

the same time the amount is added or subtracted in the cross footing register, it may be added or subtracted, as desired, in any of the other registers.

The controlling mediums for adding and subtracting are adjustable stops or cams, set on a bar moving with the carriage. The difference in the design of the stop controls the action of the register to add or subtract.

The register in which the typed amount is to be introduced, is selected automatically by an adjustable stop called a selector, mounted on a separate bar, moving also with the carriage. Selectors may be set to introduce typed amounts in one, several, or all registers.

The form is inserted in the typewriter carriage and is moved to the printing point, which, as on a regular typewriter, is stationary. The type-bar, as it strikes the paper, making the impression, sets up the number typed in the adding mechanism, but does not actuate the register until the figure in the unit column (the last figure) is typed. The action in all wheels of the affected register takes place simultaneously. Thus an error in typing any amount can be corrected previous to the writing of the last figure.

The illustrations herewith and on the second page following, are intended to show two distinct methods of operation in handling a simple bookkeeping application. The methods differ in the manner by which the correctness of postings is proved.

In addition to the imprinting of amounts, the machine will type any descriptions.

The four registers shown in each illustration, provide for posting debits and credits during the same run. If debits and credits are posted in separate runs, a three register machine would be ample.

## Recapping Method

Register No. 1 accumulates a total of all debit items posted throughout the run.

Register No. 2 is the active or cross footing register.

Register No. 3 accumulates a total of all credit items posted throughout the run.

Register No. 4 accumulates a total of all new balances posted during the run.

In connection with this method, it is recommended and desirable that before the actual posting is commenced, the ledger sheets upon which the items are to be posted, be segregated, and the total of all old balances of such accounts be secured, to be used as a check against the correctness of postings at the end of the run.

The first position in the illustration shows the old balance column at the printing point. When the amount is typed in this column, it is introduced in (added in) register No. 2, which, for this illustration, has been selected to serve as an active or cross footing register. While the carriage is in this position, none of the other registers are affected.

When the carriage is tabulated to the debit column position, shown as the second operation, the selector comes into position to cause register No. 1 to operate and the add stop functions to cause the amount typed (the debit) to be added in that register. This register (No. 1) accumulates the total of all debit postings throughout the run. The same amount ($50.00) also adds at the same time in register No. 2 (the active or cross footing register).

When the credit is posted in the credit column, the amount of the credit ($35.00) is automatically added in register No. 3 (this is the register which accumulates the total of all credit postings throughout the run), and at the same time, the amount of the credit is subtracted out of the cross footing register No. 2.

At this point, the old balance, having been posted, and the debit and credit entries, having been made, the operator ascertains the new balance

## DETAIL OF OPERATION OF THE

by reading the amount showing in register No. 2 at the completion of the third operation. When the operator types this amount in the new balance column (see operation No. 4), it is automatically subtracted out of register No. 2.

If the amount has been read correctly from register No. 2 and has been typed correctly, No. 2 register should clear, allowing the operator to print a star character immediately after the amount typed in the new balance column, indicating a proof of clearance. Should the amount be incorrectly read or incorrectly typed, register No. 2 will not clear and the star therefore, cannot be imprinted.

All other ledger sheets to which amounts are posted, are handled throughout the day or run in the same way. If all postings have been made correctly, the difference between the total of the old balances, as predetermined before starting to post, and the total of the new balances, as appearing in register No. 4, will agree with the difference between the total of debits posted (appearing in register No. 1) and credits posted (appearing in register No. 3).

Likewise the accumulated totals of debits and credits appearing in their respective registers should agree with the predetermined totals taken from the posting mediums, or sales book, cash book, or journal.

If the totals agree, it proves:

(1) That the predetermined total is correct.
(2) That all items have been posted;
(3) That the correct amount has been posted in the correct column.
(4) That the debits are added and the credits subtracted.

If errors in posting have been made, the location of the error is indicated, showing whether an incorrect posting was made in the debit, credit, old balance or new balance columns and the amount of the error.

If the totals in the debit and credit registers agree with the predetermined totals taken from the posting mediums, or sales book, cash book, or journal, but the run is out of balance, it indicates that the error occurred in writing the old balance which can then be checked against the predetermined total of the old balances.

### Double Computing Method

This method differs from that above described in that instead of the necessity of proving postings at the end of the run, each account is proved while the ledger sheet is still in the machine. The securing of a predetermined total of old balances is unnecessary under this method. Instead the old balance on each account is picked up (typed) twice on each account. Amounts are introduced into the registers in a different order than that described for the previous method.

Two registers are used as cross footing registers, each, however, computing independently of the other. In the first operation, the old balance column is at the printing point. When the amount is typed, it is added in register No. 2, which is one of the cross footing registers. When the debit is posted (the second position in the illustration), the amount adds automatically in register No. 1; also adds to the old balance previously picked up in register No. 2. The amount of the debit is also added by this operation, in register No. 4, which is serving as the second cross footing register, to prove pick-up of old balance.

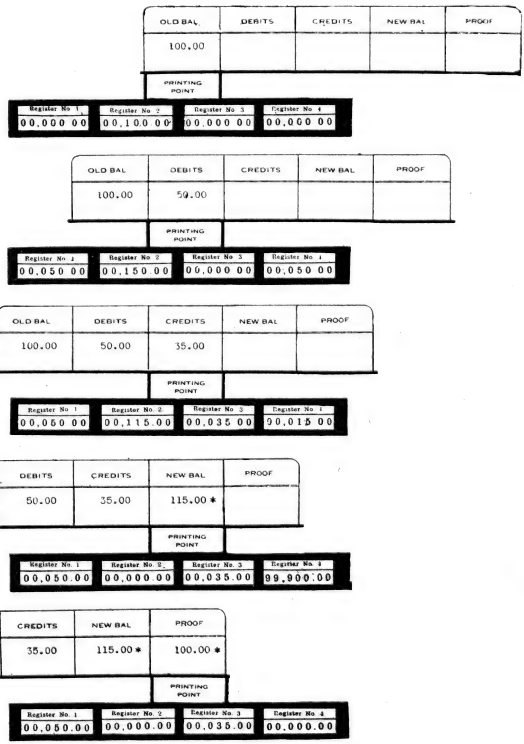
When the amount of the credit is typed, it is automatically added in register No. 3, which is used to accumulate the total of all credits posted throughout the run, and is a companion register, therefore, to register No. 1, which is accumulating the totals of all debits posted throughout the run. At the same time the amount of the credit posting automatically subtracts from register No. 2 and register No. 4.

When the carriage is shifted to the new balance column (in the fourth operation), the operator reads out and types the amount showing in register No. 2, as it appears at the end of the third operation.

## UNDERWOOD BOOKKEEPING MACHINE—continued

If it has been correctly read and correctly typed, register No. 2 will clear, allowing the star proof of clearance to be printed after the amount in the new balance column. At the same time that register No. 2 clears, the amount ($115.00) subtracts out of register No. 4, leaving it in a minus or complementary quantity, so that

In operation No. 5, when the old balance is again picked up and typed in the "Proof" column, the amount adds in register No. 4. If the pick-up is correct, register No. 4 should clear and allow the star proof of clearance to be printed showing that the pick-up has been correctly made and register No. 4 cleared. Thus the ledger sheet of such account, as is used for this illustration is proved at the completion of its posting and the machine is ready for posting the next account.



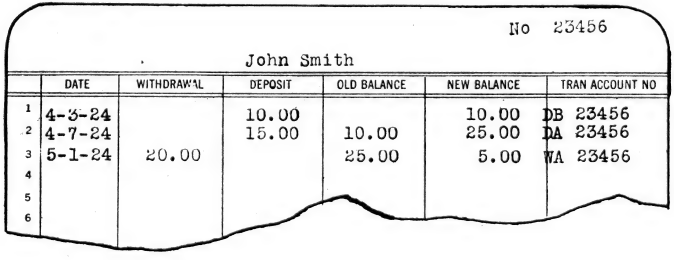

Functioning of Machine with Double Computing Method.

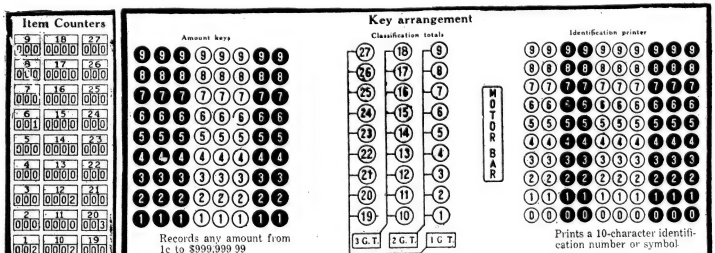
## DETAIL OF OPERATION OF THE UNDERWOOD BOOKKEEPING MACHINE—continued

When the next account is posted, the debits will add in register No. 1, to the amount already accumulated, and the credits will add in register No. 3, to the amount already accumulated, furnishing individual grand totals of debit and credit postings at the end of the day or run. Registers No. 2 and No. 4 (the cross footing registers) clear at the completion of each account. Under this method the grand total of old balances or new balances is not accumulated during the run.

When reference has been made in the foregoing to "clearing" registers, it should be understood to mean that the registers are made to show ciphers on all wheels, by adding to or subtracting from amounts showing in registers. Thus, they are "clear," just as though they had been reset by a separate clearing control.

## DETAIL OF OPERATION OF THE NATIONAL ACCOUNTING MACHINE APPLIED TO SAVINGS BANK TELLER WORK



# DETAIL OF OPERATION OF THE NATIONAL ACCOUNTING MACHINE APPLIED TO SAVINGS BANK TELLER WORK— continued

In the illustration herewith, the first item, a deposit of $10.00 by teller B, to account No. 23456, was registered and printed on the proof sheet contained within the machine, and simultaneously on the ledger card and pass book, by setting up $10.00 on the amount keys (the keyboard on the left) and the number of the account on the identification printer key, (the keyboard on the right), then depressing a classification total key reserved for deposits received by teller B. When the motor bar is operated, the amount of the deposit prints automatically in its proper column; the date is printed in its column; the account number is printed in its column, preceded by letters to designate that the transaction was a deposit handled by teller B. The balance lever is then set and the motor bar operated again, which causes the new balance to be imprinted in its proper column.

The amount of the deposit, remains stored in teller B's register, and all other deposits received by that teller during the day are added to it to provide a total of deposits received by him throughout the day. Subsequent deposits handled by other tellers are added in a similar manner in separate counters, and another counter, meanwhile, accumulates a grand total of all deposits received by all tellers.

Separate counters are assigned for accumulating totals of withdrawals, and amounts of interest credited on pass books by each teller, with grand totals of all withdrawals by all tellers and all interest credited, provided in grand total registers.

When the account again becomes active, as represented by the posting on line 2 in the illustration herewith, the teller, (in this instance teller A), sets up the amount of the old balance on the amount keys, and the account number on the identification printer keys. When the motor bar is operated, the amount of the old balance is added in the old balance counter. The amount of deposit is then registered on teller A's deposit register, and printed, and when the balancing lever is moved into position and the machine again operated, the new balance is automatically entered.

The third posting represents a credit. It is handled in the same manner as described above for posting debits, except that the amount of the withdrawal is entered in its proper column and accumulated in teller A's withdrawal register. When the balancing lever is moved into position and the machine operated, the amount of the withdrawal subtracts from the total of the old balance (previously registered in connection with this account) showing the new balance in its proper column. It will be noted that a special character adjacent to teller A's initial, designates that the transaction was a withdrawal.

## COMPARATIVE ANALYSIS OF BOOKKEEPING MACHINES

| | Elliott-Fisher | Remington |
|---|---|---|
| **Type: (basic design)** | Typewriter with accumulating and subtracting mechanism. | Typewriter with accumulating and subtracting mechanism. |
| **Counters (or registers):** | Registers stationary; printing point moves to each register position. | Registers move to printing point. |
| **Cross-footer (or active register):** | Separate register traveling with printing point; always in operating position. | Separate register traveling with carriage; always in operating position. |
| **Number of totals: (maximum)** | Twenty-nine. | Thirty. |
| **Totals recorded: (how?)** | Copied from register readings and typed. | Copied from register readings and typed. |
| **Method of subtraction:** | Direct in cross-footer. Complementary in vertical registers. | Direct in cross-footer and all registers having subtract cams. |
| **Tabulation:** | Manual 10-key decimal. | Manual 10-key decimal. |
| **Elimination of amounts in registers:** | Subtracted out. | Subtracted out. |
| **Keyboard:** | Standard typewriter. | Standard typewriter. |

| | | |
|---|---|---|
| **Correction of set-up:** | No; register is actuated as each figure is typed. | No; register is actuated as each figure is typed. |
| **Tally strip or sheet:** | Proof sheet. | Either or both. |
| **Summary of postings usual recommended:** | Proof sheet underlying forms, provides carbon copy of all postings; totals of each column read out of registers and typed. | Predetermined total of postings checked against registers and posted to control sheet; ledger sheets offset until proven. |
| **Correct pick up of old balanc (how proved?)** | Predetermined totals checked against proof sheet and totals accumulated in column register; also by total of double pick-up. | Predetermined totals checked against proof sheet and totals accumulated in column register; also by total of double pick-up. |
| **Proof of clearance:** | Permits of printing star character before and after posting. | All numeral keys lock when crossfooter does not clear; star character. |
| **Ledger and statement combine (how made?)** | One operation; carbon copy. | One operation; carbon copy or split platen. |
| **Scope of printing:** | Typewrites anything. | Typewrites anything. |
| **Visibility of printing point:** | Yes | Yes. |
| **Operation:** | Manual. | Manual. |

# COMPARATIVE ANALYSIS OF BOOKKEEPING MACHINES

| | Underwood | Ellis Adding Typewriter |
|---|---|---|
| **Type: (basic design)** | Typewriter with accumulating and subtracting mechanism. | Adding-subtracting machine combined with typewriter. |
| **Counters (or registers):** | Registers stationary, but operate from any position of carriage. | Counters operate from any position of carriage. Set-up of amounts is made on adding machine keyboard. |
| **Cross-footer (or active register)** | Any register will act as cross-footer; stationary; always in operating position. | Counter acts as cross-footer; stationary; always in operating position. |
| **Number of totals: (maximum)** | Five | Two. |
| **Totals recorded: (how?)** | Copied from register readings and typed. | Printed automatically by depression of key on keyboard. |
| **Method of subtraction:** | Direct in all registers; automatically controlled from stops on carriage. | Direct; controlled from key on keyboard or automatically from stops on carriage. |
| **Tabulation:** | Manual 10-key decimal and automatic carriage return. | Automatic and automatic carriage return. |
| **Elimination of amounts in registers:** | Subtracted out. | Automatic by printing total. |
| **Keyboard:** | Standard typewriter. | Separate standard typewriter and standard full-key adding machine. |

| | | |
|---|---|---|
| **Correction of set-up:** | Yes; until last figure of amount is typed. | Yes; until motor bar is operated. |
| **Tally strip or sheet:** | Either or both. | Either or both. |
| **Summary of postings usuall recommended:** | Proof strip containing carbon copy of all old balances, new balances and debit or credit items; total read out of registers and typed. | Predetermined total of postings checked against tally strip. |
| **Correct pick up of old balance (how proved?)** | Old balance repeated to clear secondary cross-footer; or new balance accumulated and checked against totals of debit and credit postings and previous day's new balances. | Old and new balances relisted and totalled, difference should equal difference between debit and credit postings. |
| **Proof of clearance:** | Each register is equipped to print star character. | Prints distinctive character with totals. |
| **Ledger and statement combined (how made?)** | One operation; carbon copy. | One operation; carbon copy or split platen. |
| **Scope of printing:** | Typewrites anything. | Typewrites descriptions and quantities; amounts printed from adding machine type section. |
| **Visibility of printing point:** | Yes. | Yes |
| **Operation:** | Descriptions and amounts are typed. Motor driven adding and subtracting mechanism. | Electric |

## COMPARATIVE ANALYSIS OF BOOKKEEPING MACHINES

| | Burroughs | Dalton |
|---|---|---|
| Type: (basic design) | Adding-direct subtracting machine. | Adding machine. |
| Counters (or registers): | Counter operates from any position of carriage. | Counter operates from any position of carriage. |
| Cross-footer (or active register) | Counter handles all operations. | Counter handles all operations. |
| Number of totals: (maximum) | One | One. |
| Totals recorded: (how?) | Printed automatically. | Printed automatically. |
| Method of subtraction: | Direct; controlled from lever on keyboard or automatically from stops on carriage. | Semi-complementary; subtracts in one operation, prints in another. Controlled semi-anutomatically from stops on carriage. |
| Tabulation: | Automatic and automatic carriage return. | Automatic. |
| Elimination of amounts in registers: | Automatic by printing total. | Automatic by printing total. |
| Keyboard: | Standard full-key adding machine. | 10-key adding machine and slide-set word printer for abbreviated descriptions. |

| | | |
|---|---|---|
| **Correction of set-up:** | Yes; until motor bar is operated. | Yes; until motor bar is operated. |
| **Tally strip or sheet:** | Tally strip. | Tally strip. |
| **Summary of postings usually recommended:** | Predetermined total of postings checked against tally strip. | Predetermined total of postings checked against tally strip. |
| **Correct pick up of old balance: (how proved?)** | Picked up second time on tally strip and subtracted from total of new balance accumulated in counter. Amount remaining in counter is amount of debit or credit posted which is then printed on tally strip, clearing counter. | Old and new balances relisted and totalled; difference should equal difference between debit and credit postings. |
| **Proof of clearance:** | Prints distinctive character with total. | Prints distinctive character with total. |
| **Ledger and statement combined: (how made?)** | Split platen. | Split platen |
| **Scope of printing:** | Prints amounts, dates, folio numbers, and limited number of fixed characters or abbreviations. | Prints amounts, dates, folio numbers and limited number of fixed characters or abbreviations. |
| **Visibility of printing point:** | No. | Yes. |
| **Operation:** | Electric. | Electric. |

## COMPARATIVE ANALYSIS OF BOOKKEEPING MACHINES

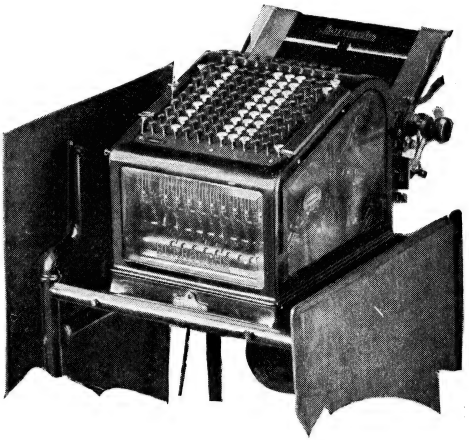
| | Burroughs-Moon-Hopkins | National Accounting Machine |
|---|---|---|
| Type: (basic design) | Typewriter with accumulating, subtracting and multiplying mechanism. | Distinctive design of combined cash register and adding machine. |
| Counters (or registers): | Any one front register can be moved to operating position. Rear register is stationary and in position to operate. | Registers move to printing point. |
| Cross-footer (or active register) | One front register may handle all operations or rear register may act as cross-footer. | Separate register. |
| Number of totals: (maximum) | Four. | Three grand and twenty-seven individual. |
| Totals recorded: (how?) | Printed automatically. | Printed automatically from control on keyboard. |
| Method of subtraction: | Direct; controlled from key on keyboard. | Direct in counters so provided. |
| Tabulation: | Automatic and automatic carriage return. | Automatic by designation of counter. |
| Elimination of amounts in registers: | Automatic by printing total. | Automatic by operation of control on keyboard which prints and clears. |
| Keyboard: | Standard typewriter for descriptions and special typewriter style keyboard for amounts. | Full-key, 3-section, cash register type. |

| | | |
|---|---|---|
| **Correction of set-up:** | Yes; until motor bar is operated. | Yes; until motor bar is operated. |
| **Tally strip or sheet:** | Tally strip. | Detail strip and proof sheet of all postings. |
| **Summary of postings usually recommended:** | This machine is recommended principally for billing. | Proof sheet. |
| **Correct pick up of old balance: (how proved?)** | | Totalled in separte counter. |
| **Proof of clearance:** | None. | Prints distinctive character. |
| **Ledger and statement combined: (how made?)** | | Three records consisting of ledger, proof sheet and one other form, can be printed simultaneously. |
| **Scope of printing:** | Typewrites descriptions and quantities; amounts printed from adding machine type section. | Prints date, amounts, character representing operator's indentity, and kind of transaction and account number. |
| **Visibility of printing point:** | No. | No, but proof sheet on which all transactions are printed, is visible. |
| **Operation:** | Descriptions are typed. Adding and subtracting mechanism is motor driven. | Electric. |

## BURROUGHS BOOKKEEPING MACHINE

### (Class Six)

Made by the Burroughs Adding Machine Company. General offices and factory, Detroit, Michigan. Sold by their own sales force through branch offices.



Burroughs bookkeeping machines are made in several models, differing in features of control, carriage and arrangement of the keyboard, to fit them for the various requirements of commercial ledger and statement posting and for all other classes of commercial and bank accounting.

The basis of all models is a high type, full button-key keyboard, adding and direct subtracting machine. The scope of work accomplished by these machines is governed by

The number of columns of amount keys on the keyboard;

The number of columns of folio keys (special columns of keys on the keyboard for the setting up and printing, but not adding of folio numbers, car numbers, etc., imprinting from type of distinctive design to avoid the possibility of such numbers being confused with added amounts);

The number of columns of character keys, (consisting of one or more rows of keys on the keyboard to imprint simultaneously with the amount, short abbreviations to denote the character of the posted item);

Automatic control features of the carriage, (such as automatic tabulation to the next column as each amount is registered, and automatic motor driven return, which functions to return the carriage to any desired position on the line of printing);

And many other automatic and semi-automatic features, including the imprinting of dates, controlling of the machine to add or subtract automatically in different columns, etc.

Because adding machine construction is the basis of this equipment, many of its operations are automatic, as for instance the imprinting of ciphers to the right of any amount key set on the keyboard; the automatic imprinting, and if desired, repeating of the date, folio number, and amount; one-key set-up for each descriptive abbreviation.

When folio numbers are posted in sequence, it is necessary to change the last unit only. Totals may be automatically printed and the counter automatically cleared. Over-drafts and credit balances are automatically brought to the attention of the operator by the machine refusing to print

## BURROUGHS BOOKKEEPING MACHINES—continued

until a number of extra strokes are taken. Such items are automatically noted by a special character imprinted in a distinctive color after the amount. The counter may be controlled to add or subtract automatically, and the selection or skipping of columns, and printing of balances, and extensions are also automatic.

The amount, and all of the factors set up on the keyboard, are visible before printing, and errors may be corrected at any time before the motor bar is operated.

**Subtraction is direct:** The counter is controlled manually to add or subtract, by a small lever operating in a slot having positions marked "add" and "subtract." On many models the adding and subtracting operation is controlled from stops set on a bar at the rear of the machine, tripped by the carriage in its travel across the printing point. If desired, the counter may be held in normal position by the depression of the "Counter Normal" key.

### Models, Descriptions and Prices

**(Class Six, Direct Subtracting Machines)**

All models of this class have as standard features the following control keys:

Total and sub-total keys with lock-down device; non-add key; separate column release keys; general error key; repeat key; counter normal key and controlling mechanism; carriage normal key; date and repeat key, to control the calendar feature; folio repeat key on machines equipped with folio section. A stand is also included.

Prices: Bank Ledger Posting and Statement Machines

| Model | Description | Price |
|---|---|---|
| 6401 | 11 columns of keys (8 columns adding, subtracting, totaling or balance capacity and 3 columns for dates); 12¼" semi-automatic cross tabulating carriage with high back; injector and ejector, date repeat key, electric drive | $ 850.00 |
| 6402 | Same as Model No. 6401 but with motor returned carriage and skip-stop mechanism | $1,000.00 |
| 6501 | 13 columns of keys (9 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; five distinctive characters in the tenth column); 12¼" semi-automatic cross tabulating carriage with injector and ejector, electric drive | 900.00 |
| 6502 | Same as Model No. 6501, but with motor returned carriage and skip-stop mechanism | $1,050.00 |
| 6507 | 13 columns of keys (9 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 9 two-letter distinctive characters in the tenth column); 12¼" semi-automatic cross tabulating carriage, with high back, injector and ejector, electric drive | 900.00 |
| 6508 | Same as Model No. 6507, but with motor returned carriage and skip-stop mechanism | 1,050.00 |
| 6701 | 17 columns of keys (9 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 4 columns folio section; 9 two-letter characters in the tenth column); 12¼" semi-automatic cross tabulating carriage with injector and ejector, electric drive | 1,000.00 |
| 6702 | Same as Model No. 6701, but with motor returned carriage and skip-stop mechanism | 1,150.00 |

## BURROUGHS BOOKKEEPING MACHINES—continued

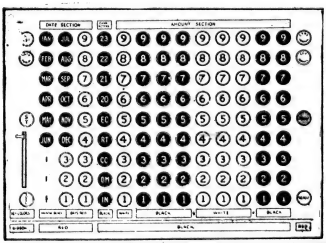
Prices: Bank Ledger Posting and Statement Machines—continued

| Model | Description | Price |
|---|---|---|
| 6717 | 17 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 2 columns for dates; 6 columns folio section; 9 two-letter characters in the ninth column); 12¼" semi-automatic, cross tabulating carriage with injector and ejector, electric drive | 975.00 |
| 6718 | Same as Model No. 6717, but with motor returned carriage and skip-stop mechanism | 1,125.00 |

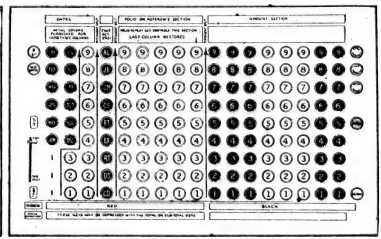
Savings Bank Posting Machine

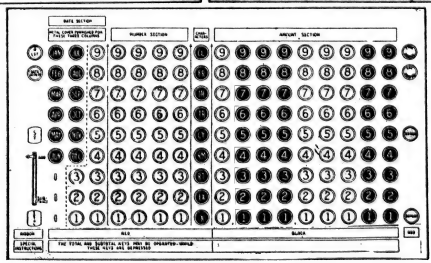
| Model | Description | Price |
|---|---|---|
| 6512 | 13 columns of keys (8 columns adding and listing capacity; calendar keys for month, date and year, and equipped to imprint 9 two-letter descriptive characters); 12¼" semi-automatic, cross tabulating carriage with high back, split platen, (split in the center); with right hand injector and ejector; selective debit and credit control mechanism | $1,150.00 |

Keyboard of Machine Equipped for Posting Bank Ledgers and Statements



Keyboard of Machine Equipped for Posting Commercial Ledgers and Separate Statements





Keyboard of Machine for Posting Country Bank Ledgers and Statements

## BURROUGHS BOOKKEEPING MACHINES—continued

### Commercial Ledger Posting Machines

| Model | Description | Price |
|---|---|---|
| 6403 | 11 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates); 12¼" semi-automatic, cross tabulating carriage with injector and ejector, electric drive | $ 875.00 |
| 6404 | Same as Model No. 6403, but with motor returned carriage and dual operating bar for vertical posting | 1,025.00 |
| 6503 | 13 columns of keys (9 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 9 two-letter descriptive characters in the tenth column); cipher cut-out for columns 1 and 2; 12¼" semi-automatic, cross tabulating carriage, electric drive | 925.00 |
| 6504 | Same as Model No. 6503, but with motor returned carriage, selective debit and credit mechanism, and vertical posting bar or shuttle carriage device | $1,075.00 |
| 6505 | 13 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 15 three-letter descriptive characters printing in one column from keys in the ninth and tenth columns); 12¼" semi-automatic, cross tabulating carriage, electric drive | 950.00 |
| 6506 | Same as Model No. 6505, but with motor returned carriage and dual operating bar for vertical postings | 1,100.00 |
| 6703 | 17 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 4 column folio section; 15 three-letter characters on the thirteenth and fourteenth columns); 12¼" semi-automatic, cross tabulating carriage, electric drive | 1,050.00 |
| 6704 | Same as Model No. 6703, but with motor returned carriage and dual operating bar for vertical postings | 1,200.00 |
| 6705 | 17 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 3 columns of keys for regular dates and an extra set of date keys in the ninth, tenth and eleventh column for showing future datings in connection with posted items; 15 three-letter characters in columns thirteen and fourteen; column twelve is blank); 12¼" semi-automatic, cross tabulating carriage, electric drive | 1,075.00 |
| 6706 | Same as Model No. 6705, but with motor returned carriage and dual operating bar for vertical postings | 1,225.00 |
| 6707 | 17 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 5 column folio section; 9 two-letter characters in fourteenth column); 12¼" semi-automatic, cross tabulating carriage, electric drive | 1,025.00 |
| 6708 | Same as Model No. 6707, but with motor returned carriage and dual operating bar for vertical postings | 1,175.00 |

### Commercial Ledger and Statement Posting Machines

For posting ledger and statement at the same time and proof strip also, if desired.

## BURROUGHS BOOKKEEPING MACHINES—continued

### Prices: Commercial Ledger and Statement Posting Machines—continued

6714 17 columns of keys (8 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates; 4 column folio section; 2 columns for abbreviated descriptions); 18″ semi-automatic, cross tabulating carriage with motor return mechanism; separate right and left hand injector and ejector; split platen, split 12″ to the left and 6″ to the right, and with oscillating proof strip holder; selective debit and credit mechanism; electric drive..... 1,550.00

As each factor of posting is set up on the keyboard of the machine above described, the carriage tabulates automatically to print them on the ledger sheet and repeat them on the statement, and to furnish a tally strip list showing in individual columns a proof of pick-up of old balances and the amount posted as debits or credits. This strip is later totalled and serves as a proof by which postings are checked.

### Stock Record Posting Machines

For posting quantity and value at the same time and automatically extending a new balance of both quantity and value with each posting.

6709 17 columns of keys (14 columns adding, subtracting, totaling or balancing capacity; 3 columns for dates); cipher split between columns eight and nine, which may be moved to increase or decrease the capacity of the left section with a corresponding change of the right section of the keyboard. 12¼″ semi-automatic, cross tabulating carriage; electric drive, stand ..... 1,000.00

6710 Same as Model No. 6709, but with motor returned carriage and dual bar for vertical postings..... 1,150.00

### Public Service Billing Machine

(For gas, electric and water billing. Writes the customer's bill, customer's ledger and sales recapitulation in one operation.)

| Model | Description | Price |
|---|---|---|
| 6201 | This machine is equipped with a calendar feature, special injector and ejector, and a chute for guiding the bill into the carriage. Bills are ejected through the back of the carriage. It is equipped with an automatic totaling feature, and carry cut-out feature, to handle readings from four, five or six wheel meters.<br><br>The machine operates in cycles. The present meter reading is listed and added, the previous meter reading is then listed and subtracted. The machine then automatically takes a spacing stroke and computes the net amount of consumption on the bill.<br><br>The size of the bill that may be accommodated is limited to 12″ wide and 5″ deep.<br><br>This machine is designed for public service billing exclusively and is not suitable for any other purpose. Price with electric drive ..... | $2,925.00 |

## BURROUGHS BOOKKEEPING MACHINES—continued

### Description and Prices for Extra Features

Electric Drive: (included with price of all machines above described) ..... $115.00

Wide Carriages: 18" ..... 25.00
24" (cannot be equipped with ejector) ..... 145.00

Ejector: Left hand operation, (regular equipment is for right hand operation) ..... 25.00

Split and normal platen mechanisms:
Over-all size 12¼", split 3¾" and 8½", or 8½" and 3¾", or 6⅛" and 6⅛" ..... 50.00
18", split 3¾" and 11¼", or 14¼" and 3¾", or 6" and 12", or 12" and 6" ..... 50.00
18", split 5" and 13", or 13" and 5", or 8" and 10", or 10" and 8" 75.00

Proof strip mechanism: Standard widths, 2-5/16 or 3-15/32" ..... 75.00

Limited repeat printing device ..... 25.00

### Class One and Class Two Machines for Bookkeeping Purposes

Machines of Classes One and Two, described under adding machines, are adapted when equipped with special features hereinafter described, or as standard models, for certain classes of bookkeeping, such as for bank transit work and for other accounting where subtraction is not essential. Several of the models described under adding machines are equipped complete for bank transit work.

Duplex Machines (described under adding machines) by their capacity to accumulate two separate sets of totals, each independently of the other, are adapted for sales analysis and distribution work. They have two adding counters but are not equipped to subtract direct. Each counter may be controlled automatically to operate in any position on the sheet. A total accumulated in one counter may, at any time, be transferred to the other. When totals in one counter are transferred to the other, the first counter is cleared and may be used to calculate a second result. The second result may likewise be transferred and added to the amount accumulated in the second counter, and the operation repeated indefinitely.

The second counter will furnish a grand total of all totals transferred from the first counter. Thus, in figuring sales by classifications, the machine will accumulate and print the total of each classification, and simultaneously accumulate the grand total of all sales; or the two counters may be used alternately, one to provide a total of debits and the other of credits, or any other factors on work of a similar nature.

Duplex machines may be equipped with shuttle carriages to list amounts in separate columns and to provide separate totals of each, or with semi-automatic cross tabulating carriages for listing and automatically tabulating in several columns.

The following equipment, to adapt machines of Classes 1 and 2 for bookkeeping work, may be added at the prices quoted:

Repeat printing mechanism: Automatic repeat print of items or automatic repeat print of items and sub-totals on cross tabulation ..... $100.00

Automatic total ..... $ 25.00

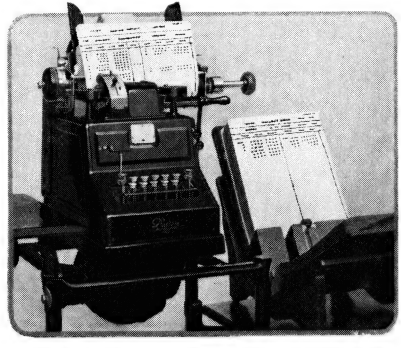
Automatic repeat print of items on cross tabulation and of items on sub-total on carriage return, including repeat print timing mechanism ..... 150.00

## BURROUGHS BOOKKEEPING MACHINES—continued

Automatic repeat print of items on cross tabulation, sub-total and total key and automatic total on carriage return, including repeat print timing mechanism..... 175.00
With selective column return, including special feed of proof strip and special control carriage tabulation, extra..... 50.00
Limited repeat printing device (on machines equipped with semi-automatic cross tabulating shuttle or motor return carriage).... 25.00
Proof strip mechanism: Standard sizes 2-5/16" and 3-15/32" wide.. 75.00
Repeat key mechanism; extra repeat key, date repeat or folio repeat keys ..... 125.00
Foot pedal for carriage throw back (on any machine except those equipped with motor return carriage)..... 75.00

## DALTON

Made by the Dalton Adding Machine Company. General offices and factory, Norwood, Cincinnati, Ohio. Sold by their own sales force, operating through branch offices.



The Dalton bookkeeping machine is a Dalton Super Model adding machine, equipped with special devices, principally in the carriage, to adapt it to bookkeeping operations. Different models are made, equipped with either semi - automatic cross taublating carriages or shuttle carriages, and in nine and thirteen column capacities.

Abbreviations for months and other descriptive words are imprinted by the word-printing device (described and illustrated on page 39), located to the left of the printing point. The set-up is made on this device by a setting lever, operating in connection with a radial index, and the amount is imprinted by an auxiliary key independently of the imprinting of the amount.

A range of fifteen characters or abbreviations is afforded on models equipped with a single word-printing device, and thirty characters on those equipped with dual word-printing device.

Subtraction is semi-complementary. Amounts to be subtracted are set up as complements on the keyboard and by the depression of a key designated "subtract" or automatically by the tabulation of the carriage, the complement is completed (the nines to the left of the complementary amount are set up automatically). When the machine is operated; the amount is subtracted in the counter and non-printed except for a minus sign at the printing point. On the next operation of the machine, the amount previously subtracted is printed as a true number, but non-added.

Upon the completion of the posting in each column, the carriage automatically tabulates or shuttles to the next column position.

## DALTON—continued
### Models and Prices

| Capacity | Carriage Size | Word Printer | Price With Shuttle Carriage | Price With Cross Tab. Carriage |
|---|---|---|---|---|
| 9 cols. | 10-inch | 15 characters | $600.00 | $650.00 |
| 9 cols. | 13-inch | 15 characters | 650.00 | 700.00 |
| 9 cols. | 18-inch | 15 characters | 750.00 | 800.00 |
| 9 cols. | 24-inch | 15 characters | 850.00 | 900.00 |
| 9 cols. | 30-inch | 15 characters | 1150.00 | 1200.00 |
| 13 cols. | 10-inch | 30 characters | 725.00 | 775.00 |
| 13 cols. | 13-inch | 30 characters | 775.00 | 825.00 |
| 13 cols. | 18-inch | 30 characters | 875.00 | 925.00 |
| 13 cols. | 24-inch | 30 characters | 975.00 | 1025.00 |
| 13 cols. | 30-inch | 30 characters | 1275.00 | 1325.00 |

## ELLIOTT-FISHER ACCOUNTING MACHINES

Made by the Elliott-Fisher Company. General Offices: 342 Madison Avenue, New York City. Factories: Harrisburg, Pennsylvania. Sold by their own sales force, through branch offices in principal cities throughout the country.



Elliott-Fisher Accounting Machines are of two different types:

(1) Simplex Accounting Machines, to write, add, subtract, and compute totals of vertically listed amounts,

(2) Universal Accounting or Bookkeeping Machines, to write, add, subtract and compute totals of amounts written in vertical columns, and at the same time compute balances of amounts written across the sheet.

## ELLIOTT-FISHER—continued

See detailed description of typing mechanism and platen under Billing Machines.

The flat platen, a distinctive feature of all Elliott-Fisher machines, lends a high degree of adaptability to this equipment, for all accounting work, in that several related forms of different sizes may be posted in one writing. The most usual application of this feature is the posting of ledger, statement and audit or proof sheet at one time.

The forms to be posted are gripped at the side of the paper holder, and securely held in place on the platen. The line spacing or vertical motion of the audit sheet, is controlled by a continuous steel tape, having pins at regular intervals, which enter perforations in the edge of the audit sheet. A turn of a handle at the side of the platen, moves the audit sheet one or several lines in either direction, as desired, bringing it into position to receive carbon impressions in uninterrupted sequence, of every posted item.

### Simplex Accounting Machines

The registers, which on this type of machine compute amounts posted in vertical columns only, are mounted on a bar at the rear of the machine head. They are adjustable to position for any desired column. Registers will operate only over the columns for which they are set. As many as 29 registers may be used.

Amounts are read out of the register through a window, so placed as to allow clear visibility from the operating position. Registers are reset to zero by subtracting out the amounts appearing in them, usually by typing the total at the foot of the column of items added in the register. Amounts subtracted from vertical registers are typed in distinctive oblique characters, through a red ribbon if desired. A type of register is also supplied, if desired, with hand resetting device.

The Simplex Accounting Machine is used extensively for invoicing, statistical records, payrolls, vouchers, check and check register, inter-line abstracting, bank remittance letters, financial statements, and all the simpler forms of accounting where writing and adding or subtracting in columns is desired. On invoice work, this machine totals each individual invoice, billed amounts and the total billing for the day. The sales sheet may be condensed or expanded to provide commodity distribution of sales, as a by-product of the billing operations.

### Universal Accounting and Bookkeeping Machines

The Universal Accounting Machine may be used on all kinds of accounting records and ledger work, sales and expense distribution, statements, etc.

In addition to the vertical computing registers, this equipment also has a cross computing (adding and subtracting) register, mounted on the right side of the writing head, and travelling with it at all times. It is controlled by stops of different design to add or subtract. Amounts introduced into vertical computing registers, are, at the same time, added into or subtracted from the cross computing register. Amounts added in a vertical register may be made to subtract from the cross computing register, and vice versa.

When it is desired to introduce amounts into a vertical computing register, but not actuate the cross computing register, a stop may be set to render the cross computing register inactive at that column position. Likewise when it is desired to accumulate totals of quantities, other than money, in a vertical register, a stop may be set to prevent such accumulations in the cross computing register.

## ELLIOTT-FISHER—continued

## Universal Accounting and Bookkeeping Machines—continued

Column selection in vertical registers is made by a ten-key decimal tabulator. When the writing head is tabulated to the correct decimal column position, in any column, the cross computing register is brought into correspondending position by the depression of a tabulator bar, located immediately in front of the cross computing register.

When amounts are typed, the action is immediately conveyed to the accumulator mechanism of both vertical and cross computing registers, each column of the register being actuated as each numeral of the amount is typed. Thus when an error is made by typing the wrong amount, the usual procedure is to complete the posting and make a counter entry on the next line as the correction.

The cross computing register, like the vertical computing registers, is cleared by subtracting out the amount appearing in it. An advantageous application of this construction is in the distribution of sales or expense amounts. The total amount is introduced into the cross computing register and as each item of distribution is typed in its respective column, it subtracts from the cross computing register and adds in the vertical register for that column thus providing a total of each classification at the end of the posting. If the distribution has been correctly and completely made, the cross computing register should clear at the end of the operation.

When the cross computing register is clear (showing all ciphers) a star character may be imprinted as proof of clearance. The star is usually shown at the beginning and end of each entry.

Subtraction, in the cross computing register, is automatic, the gear wheels being driven forward to add or backward to subtract. The action is controlled by stops of different design mounted on a bar behind the writing head.

Subtraction is performed in the vertical computing registers, by means of complements. The gear wheels in these registers always travel in the same direction. When an amount is to be subtracted, the nines to the left of the amount, to the capacity of the register, are inserted, one decimal column at a time, by a special key which may be equipped to print a distinctive character or to non-print. A shift key, called the subtract key, is then depressed and the amount typed from keys marked with complements, the imprint appearing in true numbers in distinctive oblique type. Just previous to the typing of the last number of value in the amount to be subtracted, a key is depressed which completes the complement conversion, but does not space or print.

Credit balances can only be written by the depression of the subtract key, which actuates a shift, causing the amount of the credit balance to be imprinted in oblique characters of a distinctive design, to distinguish them from debit balances.

### Proof of Posting

The ability of this machine to accumulate individual totals or amounts written in each column, makes possible several methods of proving the accuracy of postings.

The total of every factor: old balances, debits, credits and new balances, and proof of old balance pick-up (made by typing it twice and accumulating a total in a separate register), may be accumulated and checked with predetermined totals at the end of the run. As previously stated, the audit sheet, made automatically and simultaneously with the postings during the run, provides a complete detailed record of the amount, nature and posted position of every posted item, and at the end of the run, the totals appearing in the vertical column registers, may be entered at the bottom of each column.

## Prices: Elliott-Fisher Machines

The following prices are given by units. To determine the price of a complete machine, add together the prices of the units desired.

| | Length of Writing Line | | |
|---|---|---|---|
| | 11" | 16" | 24" |
| Writing machine heads without column registers, platens, pedestals or decimal tabulators: | | | |
| Single-arm type assembly | $156.00 | $170 00 | $203.00 |
| Double-arm type assembly | 190.00 | ..... | ..... |
| Writing machine heads with decimal tabulators; without column registers, platens or pedestals: | | | |
| Single-arm type assembly | 168.00 | ..... | ..... |
| Hybrid-arm type assembly | 168.00 | 200.00 | 233.00 |
| Automatic Feed Machines, equipped with writing machine heads with platens; without column registers, decimal tabulators or pedestal mounting: | | | |
| Single-arm type assembly | 225.00 | ..... | ..... |
| Writing-adding machine heads with decimal tabulators; without column registers, platens or pedestals: | | | |
| Hybrid-arm type assembly | 331.00 | 359.00 | 39700 |
| Double-arm type assembly, pin point and pica Gothic type | 351.00 | 379.00 | 417.00 |
| Bookkeeping machine heads with cross footer and decimal tabulator but without column registers, platens or pedestals—capacity of cross footer from 999 99 to 99999999 99 or 999999 to 99999999999 | 572.00 | 605.00 | 653.00 |
| Extra for Public Utility Keyboard | ..... | 36.00 | 36.00 |
| Platens (the lengths of writing lines indicated vary slightly depending upon the class of work for which they are designed): | | | |
| Without carbon rolls | 67.00 | 90.00 | 118.00 |
| With two carbon rolls | 99.00 | 123.00 | 170.00 |
| For bound books | 61.00 | ..... | ..... |
| With carrier tape and two carbon rolls | 137.00 | 156.00 | 218.00 |
| Pedestals: | | | |
| Model P without shelves | 25.00 | 25.00 | 25.00 |
| Model PR with one square and one rectangular shelf | 109.00 | 113.00 | 118.00 |
| Model PB for bound books | 104.00 | ..... | ..... |
| Shelf for P Pedestal, square, non-adjustable | 7.50 | 7.50 | 7.50 |

Column registers for writing-adding and bookkeeping machines:

| | Non-hand Clearing | Hand Clearing |
|---|---|---|
| 6 wheels— 999 99 or 999999 | $42.00 | $47.00 |
| 7 wheels— 9999 99 or 9999999 | 48.00 | 53.00 |
| 8 wheels— 99999 99 or 99999999 | 52.00 | 57.00 |
| 9 wheels— 999999 99 or 999999999 | 57.00 | 62.00 |
| 10 wheels— 9999999 99 or 9999999999 | 61.00 | 66.00 |
| 11 wheels—99999999 99 or 99999999999 | 67.00 | 72.00 |
| Base Plates for use in columns where cross footer is to operate without column totals | 8.70 | |

Above prices F. O. B. Cars, Harrisburg, Pa. and subject to change without notice

## ELLIS

Made by the Ellis Adding Typewriter Company, Newark, New Jersey. Sold by their own representatives in principal cities throughout the country.

Ellis machines comprise the following types:

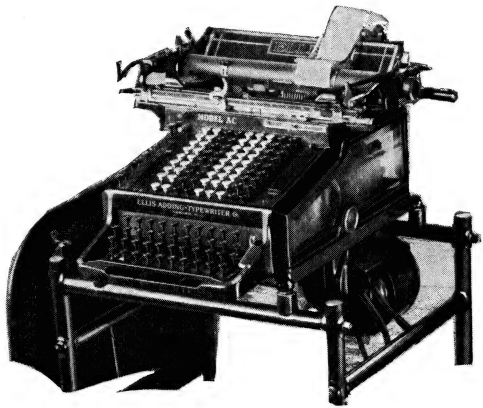
Adding-bookkeeping machines with single counters.

Adding-bookkeeping machines with two counters.

Combination adding-bookkeeping-typewriting machines with single counters.

Combination adding-bookkeeping-typewriting machines with two counters.

Duplex (two counter) models may also be constructed to subtract direct.




Adding-bookkeeping models are used principally for bank transit work or general billing, and some other kinds of bank bookkeeping. The non-add feature may be controlled by the movement of the carriage to allow of the imprinting but not adding of bank ABA numbers, folio numbers, etc.

The combination adding-typewriting machine is adaptable for general bookkeeping, and is also used for bank transit work. The typewriter section is entirely independent of the adding section, the design comprising two separate machines in the one frame. Added or subtracted amounts are set up on the adding machine keyboard and printed by a separate printing device of adding machine design. The typewriter beyboard is used only for the typing of descriptions and amounts, or quantities that do not enter into the calculated totals. The numeral characters imprinted by the typewriter are different in design from those imprinted by the adding machine section as added or subtracted amounts, thereby eliminating the possibility of confusion or error.

The design of the typewriter section comprises a front stroke type action with the type bars mounted in a solid segment. Printing is visible. The carriage on all types of machines (those with and without the typewriter section) is similar to that of a typewriter. It may be equipped to be fully automatic, including automatic return and controlling of non-add, and non-print features. Stops of different design, set on a bar at the front of the carriage, are tripped by the tabulation of the carriage, to control the adding and subtracting functions of the counter. On two counter models, selector stops automatically select the counter to operate in each column.

The counter arrangement of duplex models provides for accumulating totals in either counter or for transferring the total accumulated in one counter to the other.

## ELLIS—continued

Subtraction is direct and may be controlled automatically in definite column positions by tabulation of the carriage, or manually, by means of a key on the keyboard. The special-control keys are: Non-add key for non-adding any item; Debit-add key for controlling the adding of items into the debit or No. 1 counter; Debit-Sub-total key for printing as a sub-total, amounts accumulated in the debit or No. 1 counter; Credit-add key for controlling the adding of items into the credit or No. 2 counter; Credit-Sub-total key for printing as a sub-total, amounts accumulated in the credit or No. 2 counter; Credit-Total key for printing a total of balances accumulated in the credit or No. 2 counter; Repeat key for repeating an item set up on the keyboard in any capacity designated by the other control keys; Error key for the restoring of all keys depressed on the keyboard; Subtracting key, when depressed, causes the machine to subtract in one counter. When the total key is depressed, it immediately cuts out and restores all other feature keys that may be in operating position. A blank stroke before the taking of a total is not necessary.

A safety control, locks all adding or subtracting operations of the machine while the carriage is out of an amount column position

In posting ledger and statements at the one operation, the two forms may be inserted into the machine at the one time with carbon paper between. Or a split platen may be provided, to allow for the insertion of a ledger sheet in one end of the carriage, and a statement form in the other, repeating the posting from the ledger sheet to the statement by the automatic tabulating action of the carriage.

### Models and Prices

| | |
|---|---|
| Single counter adding machine, 9 columns adding and listing capacity | $ 450.00 |
| Same as above with fully automatic carriage | 500.00 |
| Duplex model, 9 columns adding and listing capacity | 550.00 |
| Same as above with fully automatic carriage | 600.00 |
| Combination adding-bookkeeping and typewriter, single counter, complete with all automatic devices | 850.00 |
| Same as above with two counters | 950.00 |
| Subtraction model | 1,275.00 |
| The above prices include standard size 14" carriage, electric drive and single case typewriter characters. | |
| Add for 18" carriage | 50.00 |
| Add for 24" carriage | 100.00 |
| Add for shift key and upper and lower case characters on typewriter | 35.00 |

## NATIONAL ACCOUNTING MACHINES

Made by the National Cash Register Company, Dayton, Ohio.

This machine has been on the market but a short time. Its design, functioning and operation adapt it more particularly for analysis and auditing work than for posting ledgers and statements. It is used in accounting and statistical work by wholesalers, retailers, jobbers, department stores, railroads, manufacturers and other lines of commercial business. It is also used for some classes of bank work.

Its principal distinctive feature is the large number of totals which it carries. Twenty-seven individual and three grand totals are its maximum capacity. It provides practically any combination of totals and grand totals.

## NATIONAL ACCOUNTING MACHINES—continued

Each machine is specially built to meet the requirements of the business with which it is to be used. It does not necessarily change the system now in use. Any of sixty different types of printers may be built into the machine, and as many totals and sub-totals up to the maximum number may be installed. The keyboard capacity and folio or account number section are likewise individual in their design and capacity. As many as five printed records of each classification may be produced at one time.

The accumulations in each counter may be printed as a sub-total or printed and cleared. All accumulators are equipped with a special lock and key so that only authorized persons may sub-total or clear them, thus making one person responsible for all records.

In addition to accumulating individual and grand totals, the machine counts the number of items of each classification, thus providing information valuable in figuring averages for sales costs purchases, etc.

A detailed record of each operation is printed on a roll of paper inside the machine and the totals of each classification may also be printed upon the same strip. This detailed record strip is equipped with an automatic device to permit writing a notation opposite any printed record. This record can be used as a posting medium, a proof sheet, or as a permanent record for reference purposes.

A ticket can also be issued, showing the date, amount, classification and identification number and symbols, such as code, or account number or cost price. The ticket may also be used as a tracer, posting medium, receipt or requisition, or can be sorted and filed for use with analysis of accounts, sales, payroll costs, expenses, etc. The information printed on the ticket can at the same time be printed on a strip or form which may be inserted in the machine.

Some of its uses are:

**Commercial:**

Accounts Control
Contract Distribution
Cost Analysis
Expense Analysis
Labor Distribution
Pay Roll Distribution
Hotel Accounting
Production Control
Purchase Analysis
Sales Analysis
Stock Control
Stock Estimate Analysis
Remittance Distribution
Hospital Accounting

**Banking:**

Savings Department, for posting deposits, withdrawals and interest to pass book, ledger card and tellers' audit sheet in one operation, providing separate totals of each teller's deposits, withdrawals, and interest postings, a grand total of all deposits, withdrawals and interest, old balances, etc.

### General Construction

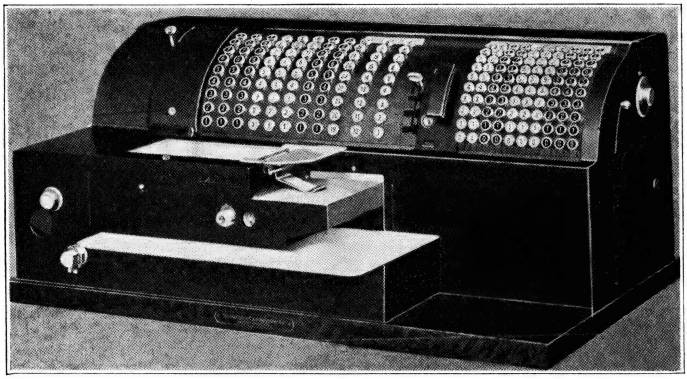
In appearance the machine follows cash register design. It has a radial keyboard, is push-in key-set and motor operated. The counters or individual total registers are located in the back of the machine and when selected by the depression of a key on the keyboard (each counter has an individual control key) they slide on a bar into position for engagement. The accumulated totals are not visible. All totals may be printed as totals or sub-totals on the proof sheet within the machine.

The styles of printers with which this machine may be equipped, are numerous. All print through a ribbon. A sliding printing table and a line selector operated from a separate keyboard to the left of the printing

## NATIONAL ACCOUNTING MACHINES—continued

point, provide speed in locating the ledger card, statement or other form in the correct position for printing.

The printing action is unusual. Two forms may be inserted, one above the other and in the operation of the machine, one is imprinted slightly previous to the other and is then ejected, making way for the impression on the second form. Many of the printing actions are automatic. All ciphers to the left of the last digit set on the keyboard, print automatically. The date and the identification mark to distinguish the classification, are imprinted with each item. Totals print automatically from the depression of a key.



Sub-totals can be taken by moving the total lever to an upper position and depressing the keys controlling each total. The amount of each total is printed on a proof sheet.

When it is desired to clear the machine, the total lever is moved to a lower position and the different total keys depressed to bring their respective counters into operating position.

Sub-totals are identified by a distinctive character after the amount; clearing totals are likewise identified by a printed character. The proof sheet can be taken out of the machine for filing. The size of ledger cards may be 8 inches wide by 4 to 6 inches high. When used in banks, the pass book dimension closed, may be 3½ by 4, 5 or 6 inches.

### Models and Prices

Practically every installation of these machines is built to order and it is, therefore, difficult to show prices for complete units. The following are understood to be the basic prices:

| | |
|---|---|
| Basic price of machine, equipped with 5 rows of keys, with printer, detail strip, and one counter | $1,100.00 |
| Extra for each additional counter | 25.00 |
| Extra for number printer | 200.00 |
| Extra for indication of amount registered | 50.00 |
| Extra for cash drawer | 35.00 |

# REMINGTON ACCOUNTING MACHINE
## (Wahl Mechanism)

Made by the Remington Typewriter Company, Incoroprated. General offices, 374 Broadway, New York City. Sold by their own sales force through branch offices in principal cities throughout the country.




**Remington Cross Accounting Machine**

The Remington Accounting Machine is a combination of a Remington Standard Model 11 typewriter equipped with a decimal tabulator, and the Wahl adding-subtracting mechanism. The typewriter unit (described in detail on pages 402 to 405) is the same on all models. There are two distinct types of machines:

1—The Vertical Accounting Machine to write, add, subtract and com-compute individual totals of amounts written in vertical columns.

2—The Cross Accounting Machine, to write, add, subtract and compute totals of amounts written in vertical columns, and at the same time compute the balances of amounts written across the sheet.

## Vertical Accounting Machines

The primary use of the vertical accounting type of machine, is for all purposes where typewritten descriptions and added columns appear on the same page. Descriptions of any kind can be typed by the typewriter mechanism independently of, or in connection with the computing mechanism.

## REMINGTON ACCOUNTING MACHINES—continued

The registers, called totalizers, are self contained units, mounted on a rack on the front of and moving with the carriage. They are adjustable so that they may be moved to the position of any column. As many totalizers may be used on the same machine as there are separate columns of figures to be added or subtracted on the same sheet. The maximum numbr (limited by the size of the largest carriage) is thirty totalizers, each of seven columns capacity.

The registers are actuated by a mechanism operated from the standard numeral keys on the typewriter keyboard. The total is recorded on the dials of each register, appearing in a window, visibile from the operating position. The registers will add or subtract only in the columns for which they are set.

Normally, typed amounts, add in the registers. When it is desired to subtract an amount, the throwing of a lever, located on the left front of the machine, causes the amount introduced in the register to be subtracted. Registers are reset to zero by subtracting out the amount in them, usually by typing the total at the foot of the column of items added.

Vertical accounting machines are used extensively for bank transit and remittance letters, and in commercial lines, for invoicing, billing, sales analysis, statistical work, the writing of voucher checks, and any other form of accounting where writing and adding or subtracting in columns is desired. A condensed sales sheet record of all bills written, can be compiled as a by-product of the billing operations.

## Cross Accounting Machines

The Remington Cross Accounting Machine includes, in addition to the mechanism of the vertical accounting machine, a cross accumulator or totalizer, mounted on the right side of the carriage and traveling with it at all times, in which the different operations of the vertical totalizers are recorded. The cross totalizer will operate in any combination desired. It is controlled to add or subtract by stops of different design, adjustable on each vertical computing register, and tripped by the travel of the carriage as it arrives at the printing position for each column. Amounts introduced into vertical computing registers are at the same time added into or subtracted from the cross computing register.

Subtraction is performed in the vertical computing registers by throwing a lever on the front of the machine manually, which reverses the mechanism of the registers to show a subtracted amount.

This type of machine is therefore suitable for all kinds of accounting and ledger posting, sales and expense distribution, statements, etc.

When it is desired to introduce an amount into a vertical computing register but not actuate the cross computing register, a stop may be set to render the cross computing register inactive in that column position. Likewise, when it is desired to accumulate the total of quantities, other than money, in a cross computing register, a stop may be set to render the vertical computing register inactive.

Column selection in the vertical registers is made by a ten-key decimal tabulator. An auxiliary tabulator, known as a front rail column selector, consisting of tabulator keys mounted on the top of the carriage toward the front, permits the operator to reach instantly any column in which an entry is to be made, skipping all intervening columns.

When amounts are typed, the action is immediately conveyed to the actuator mechanism of both vertical and cross computing registers, each column of the register being actuated as each numeral of the amount is typed.

## REMINGTON ACCOUNTING MACHINES—continued

The cross computing register, like the vertical register, is cleared by subtracting out the amount in it. An advantageous feature of this construction is the distribution of sales or expense amounts. The total amount is introduced into the cross computing register and as each item of distribution is typed in its respective column, it subtracts from the cross computing register, and adds in the vertical register for that column, thus providing a total of each classification at the end of the posting.

If the distribution has been correctly and completely made, the cross computing register should clear at the end of the operation. If it does not clear, the entire machine locks.

### Proof of Posting

The usual method of proof is to accumulate the individual totals of amounts written in each column, such as the total of old balances, debits, credits, and new balances. An extra register is usually added to total the amount of old balances picked up a second time and typed in a separate column. The totals provided by the vertical computing registers are checked against the predetermined totals of each of the factors secured before commencing the run.

If an audit sheet is prepared (by making a carbon copy on an underlaid sheet by and at the same time as the posting of the ledger), the posted items may be checked for accuracy as to amount, posted position and account.

### Combined Statement and Ledger

Two methods of combining the writing of statement and ledger in one operation are afforded on this machine.

By the twin cylinder method of posting, the platen is split into two sections, revolving independently of each other or together, at the will of the operator, and the itemized statement and summarized ledger provide an original record on both the customer's statement and the ledger sheet. The statement is inserted in the left side of the carriage and the ledger sheet on the right side, both being inserted simultanously to secure accuracy.

The registers placed in position to operate as the amounts are typed in any or all columns of the statement, provide totals to be checked at the end of the run against the totals provided in the other registers mounted in position over the columns of the ledger. Thus many varieties of checks may be afforded to prove the correctness of postings to both statement and ledger.

This arrangement of the machine is also serviceable in accounting work where two records of the same transaction are required, showing respectively the detail and summary, or for writing vouchers and distribution (the vouchers being inserted in the left side of the machine and distribution sheet in the right side).

By the second method, a carbon record is made from the statement to the ledger sheet. If desired, a special device may be attached to condense the items on the carbon record to eliminate all waste of space. This device is used principally for condensing items of invoicing on a sales or sales distribution sheet.

## REMINGTON ACCOUNTING MACHINES—continued

### Models and Prices

Vertical Accounting Machines, consisting of typewriter and actuator only, without totalizer, with carriage

| | |
|---|---|
| A | $210.00 |
| B | 215.00 |
| C | 222.50 |
| D | 242.50 |
| E | 277.50 |

Cross Accounting Machines, consisting of typewriter and actuator only, without totalizer, with carriage

| | |
|---|---|
| A | $397.50 |
| B | 402.50 |
| C | 412.50 |
| D | 435.00 |
| E | 480.00 |

(For widths of carriages, see page 404.)

**Totalizers for both types:**

| Number of wheels | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|
| Price | $55.00 | $60.00 | $65.00 | $70.00 | $75.00 | $80 00 |

Each individual wheel, above seven, up to the limit of capacity (13 wheels) ..... $ 5.00

Dummy Register (Each operation of the cross footer must be transmitted through a vertical totalizer, or if no column total is desired but an amount is to be introduced into the cross footer, a dummy register is used), price ..... 5.00

Totalizers are supplied with and without space between dollars and cents, and may be equipped to compute amounts expressed in numerals by the decimal system, pounds, shillings and pence, ⅛ and ½ fractions, or a combination of money and fractions, and many other combinations of units of weight, measurement, time and capacity, etc. The maximum capacity of the totalizer is thirteen places. All totalizers are interchangeable.

Stand with book shelf ..... 30.00

Stand without book shelf ..... 25.00

Tray and ledger stand, but without book shelf, for use with stand without book shelf ..... 12.50

## UNDERWOOD BOOKKEEPING MACHINE

Made by the Underwood Typewriter Company. General offices, 30 Vesey Street, New York City.

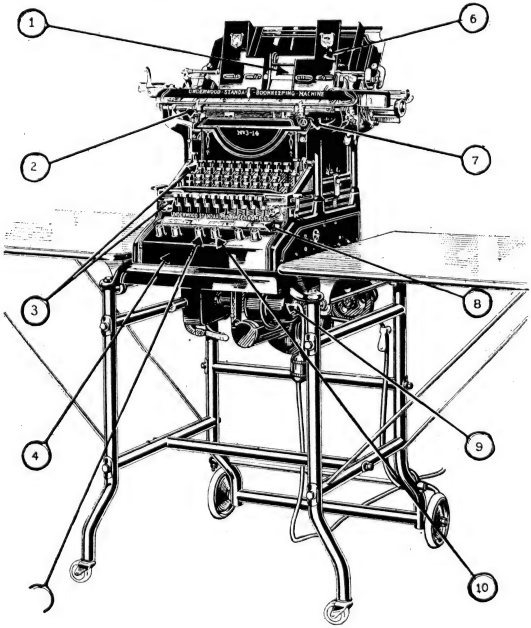
The Underwood Accounting Machine is a combination of an Underwood standard typewriter and an inbuilt computing mechanism, contained in the base as an integral part of the equipment. A variety of models are made, differing in the number of registers with which they are equipped and in the width of the carriage.

Standard models may have from one to five registers. Each register will add or subtract direct, typed amounts, and any or all registers can be controlled to function as cross computing registers. Registers may operate individually or in groups, some adding and other subtracting, the same typed amounts.

The functioning principle of the registers, adapts this machine to an extensive variety of bookkeeping work. It may be used for any of the many forms of bank bookkeeping, ledger and statement posting, transit and country bank letters, and for all kinds of commercial bookkeeping.

The typewriter section is used for typing all descriptions. Amounts are introduced into the registers from the numeral keys on the top row of the typewriter. A ten-key decimal tabulator controls the positioning on the sheet for both the typed descriptions and the computed amounts.

## UNDERWOOD BOOKKEEPING MACHINES—continued




**An Underwood Bookkeeping Machine Having Three Registers and Fully Equipped**

1—The proof or tally strip for the simultaneous listing of posted items to check entries and prove totals; 2—automatic carriage return control and line spacer; 3—upper: numeral keys; lower: tabulator keys; 4—the calculating mechanism contained in the base; 5—eliminating keys to correct errors before they are carried into the machine; 6—the aligning plate to gauge the position of forms to secure perfect line registration; 7—the indicator, showing whether the register is controlled to add or subtract; 8—register dials set under glass panel, visible to the operator; 9—the electric motor drive; 10—the "star proof of clearance" key, operative only when the register is cleared.

## UNDERWOOD BOOKKEEPING MACHINES—continued

### Construction

The typewriter section is substantially the same in its construction as a standard Underwood typewriter, described on pages 410 to 412. It may be equipped with either single case (capital letters) only, or a combination of both capital and small letters.

The registers are contained in the base. They are actuated independently of the typewriter mechanism. The operator, in typing an amount, sets up a condition only, and when the last figure of the amount is imprinted, an electrical contact is automatically made causing a motor to drive the adding and subtracting mechanism. Subtraction is direct and where required, the figures will automatically print in red (such as credits in ledger postings).

The selection of the register in which it is desired to introduce an amount, is made by a stop called a "Selector," mounted at the rear of the machine, tripped by the carriage as it brings the specific column to the printing point. The action in each register (either adding or subtracting) is likewise controlled by a stop set on a bar, also at the rear of the machine. An indicator at the upper right side of the typewriter section indicates the control (whether to add or subtract) of each register, before an amount is typed. Should an error be made in typing an amount, it may be corrected at any time before the last figure is typed, by depressing a key, known as an "Error" key, located immediately in front of the active register. A star character, imprinted from a key located beside the error key on each register, when depressed, causes a star to be printed either before commencing, or at the finishing of an operation, as proof that the affected register was clear before or after the posting.

Feeding devices on the carriage provide for the insertion of ledger and statements at one time, both being produced (one as a carbon copy of the other) by the one writing. The forms may vary in length and width, and the place at which an entry is to be made, may be at a different position on each, such as at the top of the sheet on one, and at the bottom of the sheet on another. The arrangement permits of the rapid insertion and asembly of forms.

Concurrently with the posting of ledgers and/or statements a carbon copy is made in one continuous strip, of the figures printed by the machine. Totals of each factor such as debit-postings, credit postings, or new balances, may be accumulated in separate registers, if desired. Thus, a control is provided to be used as a checking medium in case of transposition or other errors on the part of the operator, and to prove the correct pick-up of old balances or other factors of posting.

The machine may also be equipped so that the forms may be inserted in front of the cylinder, directly to the writing position. Adjustable aligning plates provide for the accurate line registration of the inserted forms.

The carriage tabulates automatically immediately after the last figure of an amount is typed and returns automatically at the end of each line, spacing also for the next line.

Amounts accumulated in the registers are subtracted out to clear them. When each register is clear, the star proof of clearance may be imprinted. (For description of the methods of proof recommended in the use of this machine, see chapter "Detail of Operation of the Underwood Bookkeeping Machine".)

## UNDERWOOD BOOKKEEPING MACHINES—continued

### Models and Prices

| **Model No.** | **1-12** | **1-14** | **1-16** | **1-18** | **1-20** | **1-26** |
|---|---|---|---|---|---|---|
| Number of registers | 1 | 1 | 1 | 1 | 1 | 1 |
| Carriage length.... | 12″ | 14″ | 16″ | 18″ | 20″ | 26″ |
| Price ..... | $575.00 | $580.00 | $590.00 | $600.00 | $615.00 | $625.00 |
| **Model No.** | **2-12** | **2-14** | **2-16** | **2-18** | **2-20** | **2-26** |
| Number of registers | 2 | 2 | 2 | 2 | 2 | 2 |
| Carriage length.... | 12″ | 14″ | 16″ | 18″ | 20″ | 26″ |
| Price ..... | $675.00 | $680.00 | $690.00 | $700.00 | $715.00 | $725.00 |
| **Model No.** | **3-12** | **3-14** | **3-16** | **3-18** | **3-20** | **3-26** |
| Number of registers | 3 | 3 | 3 | 3 | 3 | 3 |
| Carriage length.... | 12″ | 14″ | 16″ | 18″ | 20″ | 26″ |
| Price ..... | $875.00 | $880.00 | $890.00 | $900.00 | $915.00 | $925.00 |
| **Model No.** | **4-12** | **4-14** | **4-16** | **4-18** | **4-20** | **4-26** |
| Number of registers | 4 | 4 | 4 | 4 | 4 | 4 |
| Carriage length.... | 12″ | 14″ | 16″ | 18″ | 20″ | 26″ |
| Price ..... | $1025.00 | $1030.00 | $1040.00 | $1050.00 | $1065.00 | $1075.00 |
| **Model No.** | **5-12** | **5-14** | **5-16** | **5-18** | **5-20** | **5-26** |
| Number of registers | 5 | 5 | 5 | 5 | 5 | 5 |
| Carriage length ... | 12″ | 14″ | 16″ | 18″ | 20″ | 26″ |
| Price ..... | $1175.00 | $1180.00 | $1190.00 | $1200.00 | $1215.00 | $1225.00 |

The prices shown for each machine include nine place capacity registers, a standard book support and three column selectors.

Proof sheet device, to supply a carbon record of posted items on a continuous strip, fed from a tally roll, extra ..... $50.00

Front feed attachment, for the insertion of sheets in front of the platen ..... 75.00

Automatic control for subtraction ..... 35.00

Tally roll attachments:

| **Width** ..... | **2½″** | **3″** | **3½″** | **4″** | **4½″** | **5″** |
|---|---|---|---|---|---|---|
| Price ..... | $25.00 | $30.00 | $30.00 | $35.00 | $35.00 | $40.00 |
| **Width** ..... | | **5½″** | **6″** | **6½″** | **7″** | **8″** |
| Price ..... | | $40.00 | $45.00 | $45.00 | $50.00 | $55.00 |

Rewind tally, additional to price of tally..... $25.00

## WALES

### Subtracting Multiple Counter Bookkeeping Machine

Made by the Wales Adding Machine Company. General offices and factory: Wilkes-Barre, Pennsylvania. Sold through specially appointed dealers and their own sales force throughout the country.

These machines contain all of the features of regular Wales adding and listing machines and in addition, are equipped with two counters and two sets of visible total dials, one located above the other. The construction provides for accumulating of debits and credits, or similar items, in two separate visible counters, printing them in contrasting colors and automatically and visibly subtracting either total from the other, showing and printing the balance in the color of the greater amount.

This machine is adaptable for all classes of bookkeeping work, as well as for making customers' statements, trial balances, etc. It is equally suited to handle any class of work where a grand total is desired or on any work where separate totals and differences or balances are to be obtained.

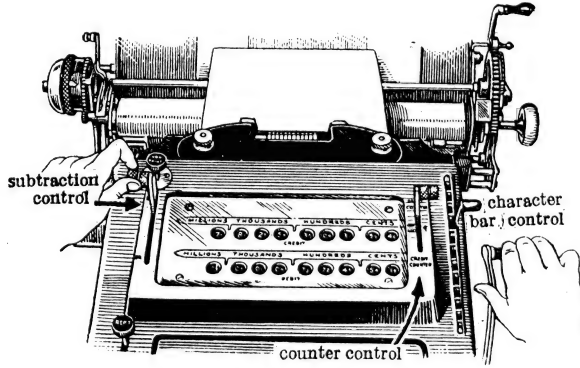
### Operation

The lower counter is known as the debit counter; the upper counter is known as the credit counter. Numbers added into the debit counter, and the debit totals are printed in black; numbers added into the credit

## WALES—continued

counter and the credit totals are printed in red. An amount is added into either counter at will, according to the position of the small lever at the right of the total windows. When the lever is set at "DR", the debit counter accumulates; when this lever is at "CR", the credit counter accumulates.

Thus, the operator can go through a journal, ledger, sales or credit slips, picking up debits or credits as they come, shifting from debit to credit and back again at will with no risk of confusing debit and credit items. At the end of the operation, both debits and credits will be separately totaled and ready for the automatic subtraction which completes the work.




Subtracting Credits from Debits

When ready to take a balance, a small lever at the left of the total windows, is shifted and held while the operating handle is pulled. The first pull subtracts and the second pull with total key depressed, prints the balance. Pulling the small left-hand lever toward the operator causes a debit to be subtracted from a credit; pushing it from the operator, subtracts a credit from a debit. A communicating sign, (a cross inside of a circle), is printed on the first or subtracting pull of the operating handle in the color of the minuend. This indicates that a subtraction has just been performed from a number of like color. The machine is cleared, whether after totaling or subtracting, by a separate operation for each counter by pressing the clear key and pulling the handle.

If desired, the accumulated amount in one counter, may be subtracted from the other, at any stage of the listing, without printing the subtrahend, minuend or remainder and without clearing the remainder from the machine. This is accomplished by pulling the handle once instead of twice and automatically printing the communicating sign in the color of the minuend. In recapitulating, such as of sales by clerks or by departments, the first group of numbers is listed and totaled in one counter and is communicated by subtraction to the other. The first counter is then cleared and the second group is listed, added and communicated, and when the last group has been listed and the total transferred, the accumulated total of the second counter can be printed as a grand total. A variable split device permits the division of the keyboard and accumulators at any point between the fifth and eleventh columns.

## WALES—continued

**Carriages:** Standard carriage takes paper 13 inches wide, is mounted on roller bearings provided with adjustable stops for cross tabulating for wide sheets. Lateral movement is manually controlled by a lever located at the front of the right hand side of the carriage. May be equipped with semi-cross tabulating carriage at an extra charge.

The Character Bar is a device that provides for the imprinting of as many as twelve 3-letter abbreviations of any characters desired. The printing of these characters does not affect the capacity of the machine. They are in addition to the regular month and date calender feature keys.

The positioning of the character bar is made by a lever and scale located to the right or left of the total dials.

### Models and Prices

Model 301, full numeral keyboard, 11 columns listing and totaling capacity in each counter. Equipped with variable split device; regular 13-inch carriage; electrically operated.....$700.00

Model 303, same as Model 301, with the addition of debit counter control, semi-automatic cross tabulating carriage and full counter control ..... 825.00

Model 311, Statement Model, equipped with month and date keys in last three left hand columns; capacity, when normal, 9 columns; when split for statement work, 8 columns. Included equipment is debit counter, control device, variable split, injector and ejector, paper chute and date repeat key; electrically operated. 750.00

Model 312, Statement Model, same as Model 311, with the addition of the character bar for imprinting special characters (see description above) ..... 800.00

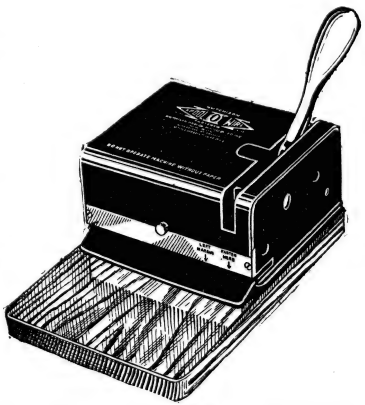
Model 313, Statement Model, same as Model 312, with the addition of semi-automatic cross tabulating carriage and full counter control ..... 925.00

## SPOOL-O-WIRE

Made by the Hutchison Office Specialties Company, Incorporated, 501 Fifth Avenue, New York City. Sold through specially appointed dealers and agents.

A small stitching machine designed for desk use, for the binding of papers or affixing of tags and labels to textiles, etc.

Its action is positive and completely automatic, accomplishing with one forward and backward stroke of the operating handle, the cutting, forming and clinching of staples made from the spool of wire contained in the machine. It will bind from two to forty sheets of average weight paper. The capacity of the spool is 1,250 feet of wire, sufficient for 15,000 staples, without refilling.



Made in one model, finished in Japan and Nickel with oak or mahogany wood base. Price .....$20.00

Extra spools of wire, each..... 1.80

# Visible Index Systems

The various types of visible index systems on the market are all designed to keep index cards in systematic order so that they may be referred to easily and quickly. They utilize, to the greatest extent, the speediest and most tireless of all human senses—sight. A glance is all that is necessary to locate the exact record that is desired, and a flip of the finger exposes the entire surface of the card to view. The index or title to desired information is always in plain sight and instantly accessible. They do away with the "hunt-and-search" system of box type files, which necessitate the handling of a dozen or more cards to find one.

The individual systems utilize different principles and devices for holding cards in cabinets or panels. Signals supplied in many different styles and colors designate the classification or other condition on each card.

Each manufacturer maintains a staff of trained specialists, skilled in business records, to develop and standardize record forms covering every phase of business management, such as accounting, sales, credits, perpetual inventory, costs, ledger, employment, etc.

The number of models and types made by each manufacturer is extensive, varying according to the number of slides or drawers with which each cabinet is equipped, the size of cards accommodated, and the number of cabinets. It is therefore impossible to set down prices in a comprehensive way.

The descriptions contained herein are confined to the operating principles of each equipment, rather than to applied uses.

## ACME

Made by the Acme Card System Company, 116 South Michigan Avenue, Chicago, Illinois. Sold by their own sales force.

The record cards of this system are mounted in all steel trays or panels and hang downward with the indexing data at the bottom of each card, and if desired, may also be placed at the top of the reverse side of each card.

The principle by which the cards are mounted in the panels represents the Acme invention. Two "card hangers," attached to any ordinary or special card, are flat pieces of metal having tabs which pierce the card to hold the hinge rigid. Formed wires are held under opposing channels of the cabinet trays and are so designed that by slightly bending the card, the hinge, which is attached to the card, slips over the two free ends of the wire, the arrangement comprising a hinge similar to a loose pin door hinge. The removal of one of the wire card hangers permits of the sliding of the remainder of the hangers in the tray so that a new card may be added at any point in its proper alphabetical or numerical position. The arrangement of the hangers provides uniformity of overlap of one card on another, for visibility of the indexing data. The back of each card is equally accessible for references and entries as the front, without removing it from the hanger. While making an entry, the preceding cards are turned back in which position they are retained, permitting the free use of both hands.

When it is desired to provide more record space than that possible on each card, a sheet having perforations spaced so as to fit over the metal hinge at the top of the card, is slipped over the master card which is not removed from its hanger.

A wide variety of color signals is provided. Any size of card from 4 to 13 inches wide and any depth desired can be used. That part of the hinge which attaches to the card may be removed and is interchangeable,

## ACME—continued

and may be attached to any other size card. Two cards may be clamped by a single set of hinges and if desired, each card may be tab cut so as to provide a double set of records in parallel columns in each tray or panel.

The trays in which cards are mounted are fitted in cabinets of all steel unit construction, interchangeable, so that additions may be made to meet the growth of the record. Single units comprise six or twelve trays, holding one or two rows of cards.

Small records from one hundred cards up, can be mounted in panels comprising a portable book. A wide variety of open frames for mounting panels in vertical revolving arrangement are provided. Because of the unit construction, extra panels can be added to each stand as needed.

In addition to the system described above, a system is made for one line records, for use where the information to be recorded can be condensed in one line, such as reference records, credit lists, cross indexing, membership or subscriber lists, codes, etc. By this system, individual records are typed on continuous sheets of perforated paper, are then separated, inserted in transparent celluloid tubes and arranged on steel frames in alphabetical or other order, appearing as if written on one sheet of paper, yet with each line separate, permitting any name to be removed or to be transferred, or for the insertion of additional records in their proper order. Where records of a more temporary nature will suffice, one line records may be typed on specially prepared strips manufactured by this company. The base of these strips is a wood veneer over which is attached a sheet of ledger paper. These strips are made in gangs, with scoring between, so that after the reference matter has been typed, they may be broken apart and mounted under the channels of the panels, in the same way as are the celluloid tubes, above described.

## GLOBE-WERNICKE

Made by the Globe-Wernicke Company, Cincinnati, Ohio. Sold by their own sales force and through branch offices located in principal cities throughout the country.

The basis of this system is an all-metal card holder, part of the permanent equipment. It is easily removed, individually or with card attached, singly or in groups. Forms may be either card stock or ledger paper, or ordinary index cards. From one to three cards can be carried in a single holder.

The design embodies a cross bar, which fits under and slides along the flanged edges of a cabinet tray, and serves as the spacing medium to provide an equalized distance of over-lapping of one card on another, for the indexing data (name, number, etc.). The holding member is hinged to the cross bar; the cards are bent in a short fold at the top and slipped in to the hinged member, the fold keeping them from dropping down and the design of the slot formed in the hinge, prevents them from working up. Cards are, however, free to move sideways for removal or re-classifying. Cards lie with the free edge down in the trays. The hinge is sufficiently flexible to allow of the cards being turned completely back to allow writing on the under surface. When the card is turned back for the writing of entries on the reverse side, it remains in position until again turned down. Any card, 5, 6 or 8 inches wide and up to a length of 9 inches, can be accommodated.

A feature afforded by the construction of this device (erroneously claimed by the makers to be exclusive), is the offsetting of cards or sheets to distinguish them from all others held in the drawer or panel. By using cards narrower than the capacity of the drawer, the desired cards can be con-

## GLOBE WERNICKE—continued

spicuously displayed by being moved over (offset). The occasion for the use of offsetting arises in posting items to different cards, the affected cards being offset to be checked later to prove the correctness of posting.

The index matter maybe typed on the bottom of cards on the front or on the top of cards on the back, with practically any typewriter. With some makes of typewriters a card holding attachment is recommended.

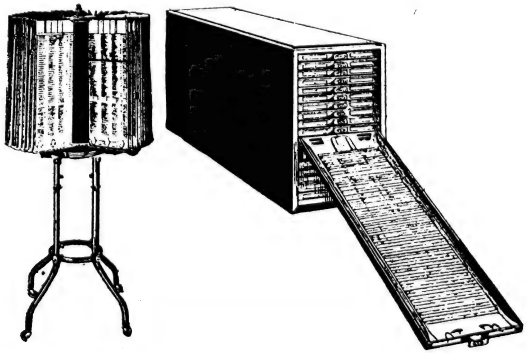
The makers also provide labels and strips tinted in different colors to act as signals, if desired, which may be pasted over the edge of the card to act as the indexing medium.

The cabinets in which cards are stored are equipped with interchangeable drawers mounted on a hinge so as to allow them to be lowered to a convenient writing position, or entirely removed if desired. All cabinets are of steel, of the same height, being 13½″ with a depth of 25″, varying in width, which is 7¼″ for 5″ cards, 8¼″ for 6″ cards and 10¼″ for 8″ cards.

## INDEX VISIBLE

Made by Index Visible, Incorporated. Main office and factory, New Haven, Connecticut.

The basis of this system is the card. Two die cuts of scroll design in the bottom of each card serve as a gauge and a holding member, to space any card that is placed above it the proper distance, to show on its upper margin the title, name, or other index information by which it is filed. The cards act as their own holders, each one locking itself and the adjacent one together, and each card giving exact elevation to the card above it. No wires, loops, catches, or pockets are necessary. The designating data is written on the top of each card.



By superimposing one card upon another, data may be applied on two or three cards, and locked together in one unit, without requiring any extra space. When a card is filled up on one side, it may be turned over and the entire reverse side used. Hinged cards permit the use of both sides simultaneously without removing the card.

Cards up to 5 x 8 inches may be used. When in the trays, they rest at an angle convenient for writing or checking. They are readily interchange-

## INDEX VISIBLE—continued

able or removable, singly or in groups, and it is not necessary to remove a card to make an entry. The side edges of the card fit under the sides of the tray, allowing all cards to lie flat in each tray.

Color signals are supplied to denote conditions distinctive with each card.

The filing equipment is made in three different types:

**The drawfile** keeps its cards mounted visibly on steel drawers, housed in a fire resisting cabinet. As the list expands, new units may be added. This type protects records from dust and sunlight, and may be kept under lock and key. Standard size drawfiles each house up to 3888 visible cards in a space 10¾" wide, 25¾" deep and 13" high.

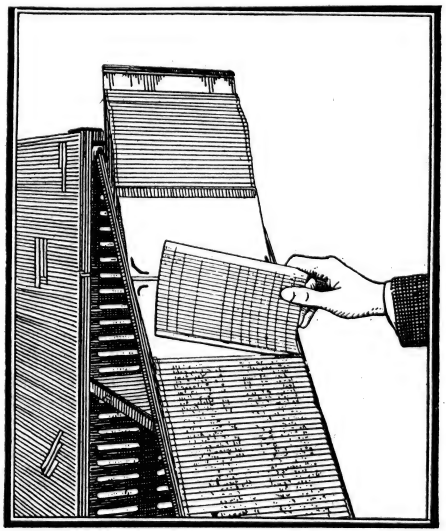
**The rotary type** provides for keeping cards mounted on aluminum panels, which in turn hang vertically on a circular track which rotates to bring the panel containing the desired card before the eyes. Recommended chiefly for reference lists requiring small cards and frequent consultation. Standard size rotary houses up to 75,712 visible cards in a space 28½" high by 33½" square.

**The ring book type** has pages of press-board on which the cards are mounted. Designed principally for desk use.

## KARDEX

Made by the Kardex Company, Tonawanda, New York. Sold by their own sales force through branch offices in all principal cities.

Record cards are inserted in transparent transoloid-tipped pockets. The pockets, themselves, are of kraft paper designed so that one pocket interlocks with the next adjacent pocket. The transoloid tip protects the cards from any wear and acts as a locking device for holding signals firmly beneath it.



The transoloid tip is similar to celluloid and is folded over to form a pocket at the bottom of the kraft paper pocket into which the lower edge of the card fits. The upper corners of the index card fit into slots cut into the kraft pockets, thus locking them securely in place. At the top of each kraft pocket are ears, extending outward, to fit into the walls of the slide or drawer, holding the records firmly in place, one over the other like shingles on a roof. This arrangement interlocks one pocket with another, insuring perfect alignment and uniform exposure of

## KARDEX—continued

the titles on the lower edge of every card. Units can be expanded from a system of a few hundred cards to batteries of a million or more.

The equipment provides for the adaptation of regular style record or index cards, usually kept in a box file, with Kardex equipment. This is done by typing an index strip to match the bottom margin of the regular Kardex card, which index strips then slip into the transoloid strip at the bottom of the card pocket, behind which is slipped the regular card bearing the record. The card itself can be removed at any time without removing the title insert.

The regular index Kardex cards, supplied by the manufacturers, are provided with a space for the title or index on the lower edge. Double cards providing for writing on the reverse side, are also furnished in a design especially adapted for convenient use with the system. Likewise, double and triple fold cards are furnished to provide four and six writing surfaces without removing from the pocket.

All cards are kept in horizontal formation in slides or drawers, fitted into steel cabinets. When the slide is withdrawn, it can be adjusted to any working angle that is most convenient for the operator, by pulling out the slide below it to form a support for the slide the operator is using. Slides are equipped with flexible tail pieces that lock the slide within the cabinet and prevents it from accidentally leaving the cabinet when it is pulled forward for entry or reference.

All slides can be interchanged from one cabinet to another to meet the demands of expanding records. The pockets in the slides may be removed singly or in groups and transferred to another slide when necessary to extend the system.

## POSTINDEX

Made by the Postindex Company, Incorporated, 375 Broadway, Boston, Massachusetts. Sold by their own specially appointed representatives located in principal cities throughout the country.

The Postindex is a device in which ledger sheets, reference or other forms are held to provide a self-constituting, visible index.

The basis of the device is a tempered steel wire having a trunnion (a small metal cylinder), fastened to each end to act as a bearing and spacing member. These wires are inserted in horizontal order in metal panels formed to provide a channel or flange on the inside of each edge. When the wires are placed in the panel, the channel arrests their movement forward or backward, but they are free to move up or down when a wire below or above is removed. The wire is flexible to allow it to be sprung out of the channels, when removed with a form.

The form, which may be a card or a sheet of ledger paper, is folded in the center and is placed under a wire in the panel with the folded edge at the bottom and the free edges at the top. The wire lies between the two pages of the form and rests against the bottom at the fold. The spacing between wires is governed by the diameter of the trunnions, providing a uniform overlap of one sheet on another, the exposed edges forming the index medium.

The wire may be threaded through two perforations located at the fold in the form, and when it is desired to remove a sheet, the wire is taken with it, but may, if desired, be slipped out or put back instantly. For ledger sheets and forms used in machine posting, the wire is not inserted in perforations. The sheets are removed by slipping them from under the wire.

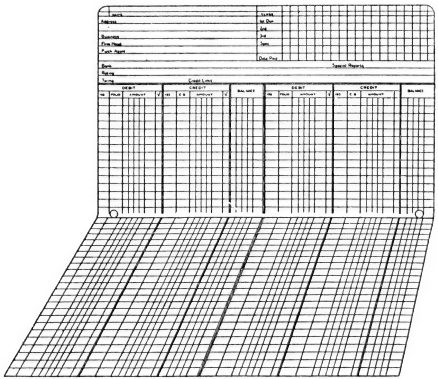
The indexing data is entered on the upper free edge, front and back, of each form; the sheets stand upright in the panel, but when in use the

## POSTINDEX—continued

forms may be divided, some lying with the free edge down and others up, the data on the back providing a continuous index. Forms lie flat to afford a smooth writing surface.

The sheet being folded in the middle, provides four writing surfaces when it is filed and the large combined area exceeds the usual proportions as compared to the space required for filing. Thus an 8x10" form is filed in a space 8x5". Two or more double sheets may be placed on one wire; memorandums on thin paper may be slipped on the wire and held securely. Several records such as for different sizes of a single item in a stock record, may be combined on the one folded form, and, if desired, quarter, half or third tab cut sheets may be placed on the wire to provide a variety of related indexes.

The use of folded sheets one-half inch narrower than the maximum width accommodated in the panel, allows for offsetting active or special sheets, such as is usual in proving postings to ledger sheets in bookkeeping machine operations.



**Appearance of Card or Ledger Sheet When Open in Panel**

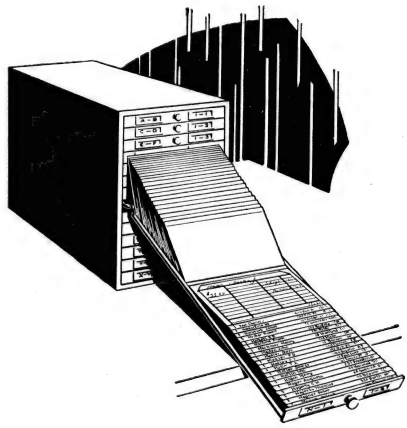
The panels are arranged in different styles of group formation. The vertical type is designed to hold steel or aluminum panels to swing singly or collectively, from a horizontal to a vertical position and vice versa.

Models are made in units of five, ten, fifteen and twenty panels each. The cabinet model, known as Model No. 5, has the panels arranged in pairs like the covers of a book, each side holding seventy-five forms or a total of one hundred and fifty in the pair. They are stored in metal cabinets having double walls and air chambers so as to be fire-resisting. As many as 48,000 records may be held in this type of index within convenient posting reach of a single operator.

## RAND

Made by the Rand Company, Incorporated, North Tonawanda, New York.

This equipment employs card holders, which suspend the cards in frames or trays, in such formation that the cards overlap each other so that the bottom margins containing the vital key or index information are always exposed to view.



This visible feature is accomplished by means of a heavy bristol board rail at the top of the pocket, by which the pocket is fastened in the frame. These rails separate the pockets in the panel so the bottom of one pocket is about ¼ of an inch above or below the adjacent pocket.

The card upon which the actual record is kept, is securely fastened in the card pocket by means of a bottom fold of transparent fibreloid (similar to celluloid), and by slots, which act as corner locks, at the top of the pocket. The fibreloid fold also protects the record from becoming damaged from soil in operating the index.

The pockets are made of heavy linen ledger paper which is suspended from the bristol board rail by means of a linen hinge, which allows the pocket to be laid out flat, when entries are made on the cards. The transparent fibreloid strip at the bottom of the pocket is wire stitched.

The pockets may be removed singly or in groups and placed at any other point in the frames or trays. It is not necessary to remove the cards from the pockets in order to post to or make reference on them.

Signals of different shapes and colors may be fitted in the fibreloid fold at the bottom of the card.

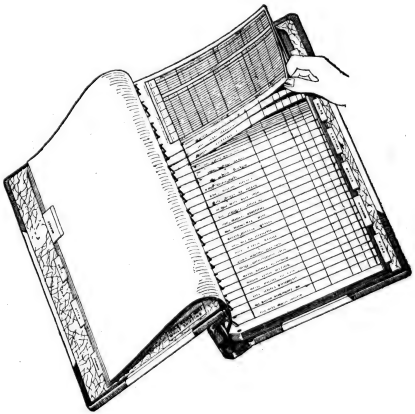
The slots cut at different points in the pocket allow of inserting different sizes of cards in uniform size pockets, as for instance, a 6x4 card on one side and a 5x3 card on the other. When desired, a duplex or folded card may be inserted, providing four separate writing surfaces.

Envelope type pockets are also made for inserting a number of cards sidewise into the pocket behind the current card, which is held to the face of the pocket in the way above described.

Two different styles of equipment are provided for holding the pockets. Vertical panels, hung on a stand or suspended from a wall bracket, are the open type of equipment. The enclosed or cabinet type have sliding trays which hold the cards in a horizontal position.

# VISIBLE RECORDS EQUIPMENT

Made by the Visible Records Equipment Company, 226 West Adams Street, Chicago, Illinois. Sold by their own representatives located in principal cities throughout the country.



A device for the holding in visibly indexed order in book form, bound sheets containing all kinds of business records. The sheets are secured in the binder by rings, through perforations at the binding edge, and are spaced with the bottom or top edges in over-lapping arrangement, ⅜" apart, providing for the showing of the indexing of each account on the exposed portion of each sheet. In this way, records are kept at all times in their respective alphabetical or numerical position and are quickly available without removal for reference or entry.

Records consisting of original and duplicate copies can be handled singly or together in one visibly indexed position.

The backbone of the binder is hinged, on either side of which are mounted prongs in two parallel rows for holding the sheets interspaced. When it is desired to change the position of a sheet, the two sides of the backbone are sprung open, the right half sliding vertically on the left, bringing all of the sheets on the right side up or down one or more spaces. By closing the backbone, the sheets on the right can then be transferred to the prongs on the left, and the right side again moved back into position. In this way, sheets may be carried back or forth to any position to provide for removing entirely, closing up the space they occupied, or inserting new sheets in their correct location.

The book units are of different sizes depending upon the size of the records to be accommodated. Some sizes hold, and visibly index, 1,000 records. For stock records, requiring a great many classifications, books may be arranged in volumes to provide access by one clerk, to as many as 10,000 sheets.

A feature of the construction is that the exposed indexing surfaces may be varied to practically any degree to provide for two or three line indexing data or to show distinctive separations between classification of records.

# EXPORT SELLING AND SHIPPING

By K. H. Hinrichs, General Manager, Export Department
Trans-Continental Freight Company, Chicago.
Author of "A Formulary of Foreign Freight Forwarding."

Since the reputation for American office and store fixtures and labor-saving devices has been established in all parts of the world, no manufacturer or dealer should hesitate to secure a portion of this business because of not being familiar with export selling and shipping.

**F.O.B. Steamer** means that the seller is to deliver the goods aboard the steamer in proper shipping condition. All subsequent risks and expense are for the account of the buyer.

**F.O.B. Destination** means that the seller pays all costs and assumes all risks until the goods reach the place of delivery as agreed upon.

**F.A.S.** (Free Alongside Steamer) means that the seller is to deliver the goods alongside steamer on lighter, or on receiving pier of the steamship company, in proper shipping condition. All subsequent risks and expense are for the account of the purchaser.

**C.I.F.** (Cost, Insurance and Freight) means cost of goods, plus freight and insurance to destination specified.

**C.F. or C.A.F.** (Cost and Freight) means cost of goods plus freight charges to destination specified.

**Packing Requirements:** For export shipping all merchandise which is in any manner liable to breakage should invariably be boxed and strapped with iron bands. Goods packed in crates or other containers of a similar description will be accepted by steamer, but generally only subject to owner's risk. Of prime importance is the necessity of protecting against water and dampness. Machinery should be covered with a heavy grease. In case of loss or damage occasioned by inefficient packing consignees have no redress other than settlement with the shipper.

**Marking:** The packages should be marked with stencil or brush with name of consignee and address or with special marks as requested by consignee. Number packages consecutively and prepare manifest or packing list showing marks on each package, kind of package and value.

**Insurance:** There are many different kinds of insurance written, but it is suggested that shippers secure "All Risk" insurance which covers the shipment from shipper's warehouse to consignee's warehouse against any risk whatsoever.

**Transportation and Documents:** Shippers can save themselves considerable time and trouble by arranging with a reliable forwarding agent to attend to the shipping of the goods. Such forwarding agents will give the shippers necessary instructions to forward the shipment and also arrange for the clearance of the shipment at seaboard taking out the necessary steamer bill of lading or thru export bill of lading, placing insurance, and, if desired, will also arrange for the collection of the shipper's invoice.

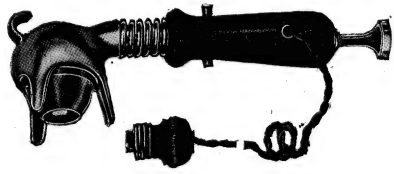
The handling of shipping documents depends entirely upon how the seller is to obtain payment for the goods. If sold on open acocunt the original bill of lading and the insurance certificate should be mailed with necessary consular documents, if required, to the consignee. If sold draft against documents, the shipper or forwarding agent presents to the bank, the above mentioned documents with draft specifying terms on which the goods were sold. Some consignees establish a letter of credit and under this plan consignee instructs his bank to cable or mail their correspondent in this country to hold to the credit of the shipper the sum necessary to cover the transaction, which sum is to be paid to the shipper upon presentation to the bank of all necessary shipping documents.

**Claims:** The proper way of handling a claim for loss or damage on export shipment is—first, to have the consignee file claim with the steam ship company and if it is not responsible or declines the claim, then all documents should be presented to the insurance company's agent at destination for adjustment. It is necessary to present the claim to the carrier responsible before the insurance company will consider it.

# Wax Sealing Machines

## SAFE SEAL ELECTRIC

Made by the Safe Seal Manufacturing Company, 94 Allyn Street, Hartford, Connecticut. Sold direct and through specially appointed dealers and agents.



Designed for conveniently and quickly applying wax seals on letters and packages. Its construction embodies a handle having an electric heating unit on one end and an impression seal on the other, provided with wire and plug for connecting with any electric light or power circuit. In operation, a wax wafer (specially designed and sold by the makers) is placed over the flap of the envelope and the heating unit applied, which melts the wafer in 10 to 12 seconds. The seal end is then applied to make the impression.

A feature of the system is specially designed gummed paper seals perforated with six V-shaped slots in irregular arrangement. The paper seal is first pasted on the area to be sealed, and when the wax wafer is applied and melted it attaches itself through the slots to the envelope, so uniting the paper seal, wax and envelope that the removal of one destroys the other.

Other emphasized features are the economy of using wax in wafer form; absence of fire danger; the elimination of repeated melting of the wax supply, preserves its adhesive qualities.

### Models and Prices

Model C, standard size, length 10½ inches .....$15.00
Both models equipped for 110 volts unless otherwise ordered.
Wax Wafers, per M.....$4.50 Special Paper Seals, per M....$2.25

## SEAL-RITE

Made by the Electrical Seal Company, 226 St. Clair Avenue, Cleveland, Ohio. Sold direct by mail.

A hand device, comprising an electric heating unit for the melting of sealing wax applied in wafer form, to letters, packages, etc. The contact of the heater melts the wax almost instantly. Attached and set at an angle to the heating unit, is an impression seal for applying the user's individual monogram or other impression, to the melted wax. The current is supplied from any lighting circuit.

### Models and Prices

Made in one model only, post paid.....$22.00
Seal-Rite Wax Wafers (175 to the pound) in 10-lb. lots, per lb..... .65

(This section continued on page 501)

# Watchman Supervisory Systems

(See Also Time Recording Devices)

## THE AMERICAN WATCHMAN'S TIME DETECTOR
## MORSE MAGNETO WATCHMAN'S CLOCK
## MORSE WATCHMAN'S PORTABLE CLOCK

Made and sold direct by the American Watchman's Time Detector Company, 233-234 Broadway, New York City.

These devices are designed for recording the time of the rounds of watchmen in factories or mercantile establishments.

The Watchman's Time Detector consists of a registering clock located at a central point, connected by wires with watchman's stations throughout the premises of buildings. As the watchman in his rounds of inspection, reaches each station, he registers on the station device, which transmits an electrical impulse causing a record of the time and station to be printed on a paper dial mounted in the master clock.

The record of any number of watchmen and stations is recorded on the one dial sheet. Specially designed dials are furnished when required.

The Magneto Watchman's Clock is an improved station device used in connection with the Watchman's Time Detector System.

The cost of the System is dependent upon installation of the electrical connecting apparatus. Each installation is separately planned and priced.

The Morse Portable Watchman's Clock is designed to be carried by a sling over the shoulder of the watchman as he makes his rounds. By means of specially designed keys, located at different points thruout the premises, he records on a paper dial locked inside the clock, the time of arrival at each point.

Various models are made, ranging in price from $40 to $150 each depending on the number of keys and type of clock.

## BOSTON MAGNETO RECORDER

Made by the Eco Clock Company, Boston, Massachusetts.

A centrally located mechanism to record the time that watchmen arrive at definite points in their rounds. The recorder is placed in the office or other suitable location, and stations are located at desired points throughout the premises to be covered in the rounds of the watchman. Each station is connected with the recorder by a separate wire, and has its record shown in a separate space on the paper dial. The recording medium is a paper chart mounted on a revolving cylinder. Electrical impulses record an indication of the station from which the report was made and the exact time of making. Any number of watchmen can record at the same time, on the same dial, and each man's record is independent of the others.

A small magneto is placed at each station to be visited by the watchman. One full turn of the crank, which he carries with him, generates sufficient current to perforate the upper dial in the space corresponding to the number of the station operated and at the exact time the record is made.

### Models and Prices

Regular models are furnished with a 12 or 24 hour dial, but clocks may be equipped to record on a 48 or 72 hour dial to provide for the recording over Sundays and holidays without the necessity of changing the dial. Made in various sizes to register from 2 to 60 stations. Price depends on size of equipment and labor and materials required in installation.

## ECO WATCHMAN'S PORTABLE CLOCK

Made by the Eco Clock Company, Boston, Mass.

A portable recording clock to be carried by watchmen making their rounds in factories and other establishments.

Records of time of arrival at different stations on the watchman's rounds are made by punch marks through a paper dial mounted within the clock. This dial is provided with printed divisions or radial sections, for the hours and minutes of the day or night. Consecutively numbered circles on the dial correspond to the number of stations to be operated. The dial makes one complete revolution in twelve hours.

Registering keys are located in, and chained to, boxes at different points throughout the premises. The construction of these keys is such that each has a shoulder of varying dimensions, so that when inserted into the clock a definite position is established to actuate a needle located over a circle designating that particular station. When the key is turned, a punch mark is made on the circle at a point to designate the exact hour and minute of registering.

A safety lock attachment or "telltale" registers the opening and closing of the case cover upon the record dial, detecting any attempt to open the clock unauthoritatively.

### Models and Prices

Made in sizes from 6 to 35 stations, each registering in its own circle on the dial. Standard equipment is a 10-hour dial, but clocks equipped with a 24-hour dial will be furnished upon request with no extra charge.

| | | | |
|---|---|---|---|
| 6-Station outfit complete | $ 60.00 | 20-Station outfit complete | $ 82.50 |
| 10-Station outfit complete | 65.00 | 35-Station outfit complete | 115.00 |

Locked station boxes, instead of the open type, furnished as standard equipment, will be supplied at an extra charge of, each ..... .75

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## Wax Sealing Machines—continued

## ELECTRIC SEALING WAX MACHINE

Made by the Electric Sealing Machine Corporation, 225 West Broadway, New York City.

A hand device, consisting of an electrically heated melting pot in which a supply of wax is placed. This pot is mounted in a metal frame similar to the frame of a self-inking hand rubber stamp. The frame is placed on the envelope or package, over the position where the wax is desired, and when a hand lever is pulled, the melted wax is allowed to run through a nozzle located at the bottom of the pot. After a sufficient amount of wax has been released, pressure is exerted on a plunger handle, located at the top of the frame, which, by a cam action, brings the impression die upon the melted wax, applying sufficient pressure to make the imprint.

The die is made of brass, mounted at the base of a water reservoir. When the pressure on the plunger handle is released, the die swings upward out of the way.

A switch is provided to supply three different degrees of heat.

### Models and Prices

Made in one model only for any current, complete with seal, delivered ..... $35.00

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# Used Machine Valuations

## PREFACE

Valuations shown in connection with any and all lines of machines, must be understood by the reader to represent the cash value, or the cash equivalent of the trading value of such equipment.

Valuations have been arrived at by a careful study and check of market conditions throughout the United States, and the prices and allowances usually offered for such machines. It will, perhaps, be found in many instances in the outright sale or trading of equipment, that higher or lower prices may be quoted. In such cases it will usually be found that the actual condition of the machine, will increase or decrease the valuation shown herein. The prospect of an immediate re-sale by the purchaser will also generally increase the valuation.

The valuations given are for machines in average condition that have seen an average amount of use and are complete as to parts and with no broken castings. However, they need not necessarily be in working order.

The reader should understand that the valuations given are not the prices at which such machines may be purchased as second-hand from regularly established dealers. These are the prices at which the dealer buys his machines in the rough; he must add the cost of his work in rebuilding, replacement of parts, his overhead and profit.

The information regarding valuations contained herein, has been obtained from sources considered reliable and while not guaranteed, is believed to be accurate, up-to-date and to represent true, average valuations throughout the country.

## REGARDING EQUIPMENT FOR WHICH NO VALUATIONS ARE QUOTED

It will be noted that for several lines of machines, valuations are not quoted. This arises because of the fact that to be dependable and stable, valuations must be based upon an existing market.

There is a competitive market for typewriters, adding machines, cash registers, etc., comprised of dealers located in different parts of the country, who will buy such equipment outright for cash. Where any open market for certain equipment, such as addressing machines, bookkeeping machines, etc., does not exist or is limited, there can be no basis to arrive at a true valuation. Such equipment is usually bought by the few dealers engaged in the handling of such used machines, only when they have an immediate prospect for its resale. They will not carry such equipment in stock, and therefore, the prices they offer are dependent largely upon how badly they need each machine.

The allowance of new machine companies for equipment on which valuations are not quoted, is usually small, and as compared one company with another, are not uniform to any degree.

It will be noted that the lines of equipment on which valuations are not quoted, are mostly those that require specialized selling, such as bookkeeping machines, or where the machine itself is usually but a part of an extensive system, such as addressing machines. The user may establish his own valuations on such machines to suit his own purposes, taking as a guide the prices shown in the catalog section for similar models of new equipment, and applying the table given on the following page, under the heading "Establishing Used Machine Valuations."

## ESTABLISHING USED MACHINE VALUATIONS

It is very often difficult for the user of any kind of store or office machines to understand the reasons for what, sometimes, appear to be low valuations on a used machine when it is offered for sale or in trade. This is particularly true when the machine is comparatively new. The following considerations upon which used valuations are usually based, will show clearly why anything like the new price cannot be expected.

1—**Depreciation.** Even though little used, a machine cannot be sold again as new. The commission paid the original salesman for selling it must be considered as a deduction from its original price, and with other second hand value considerations, such as advertising and overhead expense of the original manufacturer or seller, the initial depreciation is seldom less than 35%. The voiding of the guarantee, which never extends beyond the original purchaser, is an important factor of depreciation. A high average maximum resale valuation on a practical as well as a theoretical basis, would be 70% of the original price.
Taking, therefore, as a basis of possible resale price.....70%

2—**Express charges and handling costs,** usually paid by the purchaser or company trading it in..... 2%

3—Repairs. Inspection, cleaning, testing, adjusting, etc., after machine is received, which must be done as a matter of necessity before it can be offered again for sale..... 5%
(Add an additional 12½ to 25% if machine needs general refinishing, repairing, parts or overhauling.)

4—Disposal. Reselling costs, seeking the new buyer, including a selling commission or profit, (somebody is entitled to a profit in selling to the next user) and including rents, overhead, delivery costs, new guarantee, maintenance and discounts .....20%

Making a further minimum reduction of.....27%

Subtract from 70% (above) leaves a net valuation of.....43%
of the original selling price.

This net valuation represents ideal conditions, i. e., a late model machine, practically new, in good condition and of a nature such as will not require specialized training to re-sell it, or where the field of users is not limited. For a machine of old type, much used and in poor condition and finish; for a make that is no longer manufactured, for which parts cannot be purchased; or for a new machine of a type not suited for the average line of business, including machines such as are adapted to special systems (bookeeping machines, etc.), a much larger charge-off is justified.

## DEFINITION OF VARIOUS KINDS OF VALUATIONS

In appraising and compiling inventory valuations of business machines, the basis of valuation differs according to the purpose for which it is desired. The following represents definitions of the various terms used in connection with valuations, their meanings and the ways in which they are used.

**Reproductive Cost New,** or
**Replacement Cost New,** represent the net price charged by a manufacturer or distributor for a similar machine new. It is also taken to cover the price of a new model, where an old one has been superseded in manufacture and no longer may be bought new.

**Sound Value,** represents the replacement cost new, less the accrued depreciation. The accrued depreciation is estimated based upon the age and condition of the unit as compared to its expected life. Obsolescence

## Used Machine Valuations

and other depreciation are factors also taken into consideration.

Sound value, thus takes into consideration both depreciation and appreciation and represents to a going business, the fair value of any item of equipment. This value is usually employed when a loan is sought, where a business is bought and sold as a going concern and is the accepted basis for insurance coverage and adjustment of loss.

**Resale Value,** represents the actual cash value of a machine when placed on the used machine market. This market is governed by supply and demand and takes into account all factors. The resale value need not always apply to a machine in running order; slight disadjustment, or "tying up" as in the case of an adding machine, does not necessarily impair its value to a dealer or on a trade of a new machine.

**Liquidating Value,** represents the actual cash value. The machine may or may not be in running order and may be in any condition from brand new to junk. This value is governed by the probable price the machine will bring at a forced sale.

**Junk Value,** represents the remaining value of a machine, which as a unit is no longer serviceable, and the value consists in its residue as junk metal or service parts upon dismantling.

**Net Worth** is a term used in accounting, representing to be the physical value of equipment based upon the actual cost of acquisition, less accrued depreciation.

The object in using such a definition for value, represents, usually, the lack of a more accurate method, as this method does not take into consideration a fluctuating market. Reproductive Value is a misnomer in considerable use, representing to be replacement cost new. It is inconsistent owing to the definite distinction between price and value.

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## MEMORANDUM OF SPECIAL VALUATIONS

*You can rely on the knowledge gained from the DIGEST because it is complete, compiled by disinterested experts, and includes all machines.*

# Adding Machines

The section describing calculating machines has been placed immediately after this section instead of following in alphabetical order. This arrangement has been made for convenience and because calculating machines are very often referred to as adding machines.

## ADD-INDEX

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models)**

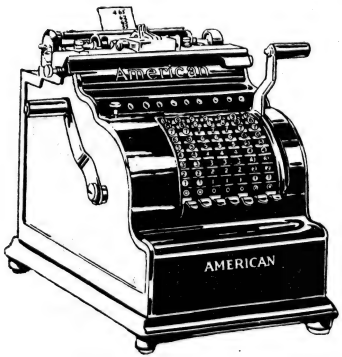
### Models and Valuations

| Models | Description | Valuation |
|---|---|---|
| 670 | 7 item and total columns, 5-inch fixed carriage | $50.00 |
| 680 | 8 item and total columns, 5-inch fixed carriage | 60.00 |
| 690 | 9 item and total columns, 5-inch fixed carriage | 65.00 |
| 691 | 9 item and total columns, 8½-inch tabulating carriage | 75.00 |

## AMCO

Now known as the Star. See Star.

## AMERICAN




Lever set-up calculating (non-listing) and listing models were made by the American Can Company, Chicago, Illinois, until May 1st, 1922, at which time the listing model was discontinued. Non-listing models are now sold by the American Adding Machine Company, 35 So. Dearborn St., Chicago, Ill., who also supply parts and factory service on all listing and non-listing models. (See Catalog Section.)

### Dates of Manufacture

Model 0 was made from 1914 to 1916; serials between 1,000 and 35,583.
Model 00 was made from 1916 to February, 1918; serials between 16,100 and 41,200.
Model 5 was made from February, 1918, to November, 1921; serials between 41,200 and 75,550.
Models 1 and 3 were made previous to October, 1917; serials between 6,600 and 22,000.
Model 4 was made from September, 1917, to May, 1922, serials between 22,000 and 75,200.

Model and serial numbers appear on a plate either on front or bottom of machine.

## AMERICAN—continued
### Models and Valuations

| Model | Description | Valuation |
|---|---|---|
| 0 Non-Listing, | 7 item, 7 total columns, etched case, without repeat key | $ 5.00 |
| 00 Non-Listing, | 7 item, 8 total columns, etched case, with repeat key | 5.00 |
| 5 Non-Listing, | Same as Model No. 00, but has smooth black finish case, red enamel keys | 6.00 |
| 1 Listing | 7 item, 8 total columns, etched case, narrow carriage taking paper 2 5/16 inches wide, two-color ribbon, clearing key, total and correction levers. (Originally sold for $88.00) | 10.00 |
| 3 Listing | Same as Model No. 1 | 10.00 |
| 4 Listing | 7 item, 8 total columns, smooth case, carriage taking paper 5 inches wide, (2 5/16 inches on rolls); two-color ribbon, clearing key, total and correction levers. Visible set-up, printing and totals; improved mechanism. (Last sold for $150.00) | 15.00 |

Model No. 4 listers were also designed for use in combination with cash drawers. They are the same as the regular Model 4, but have key holes in left side of case for locking the clearing mechanism and operating shutter over dials; with split printing attachment; paper housing; black or mahogany finish ..... 17.50

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## ARITHMOGRAPH

This was an arrangement for connecting an Underwood typewriter with a Burroughs adding machine. Few, if any, were ever marketed.

## ARITHMOMETER

See Burroughs Registering Accountant.

## AUSTIN

A ten-key non-listing machine, made in very limited quantities in Baltimore, Maryland. Manufacture has been discontinued. No valuation.

## BARRETT

**(See Catalog Section for Illustration, Descriptions and List Prices of Current Models)**

The manufacture and sale of Barrett machines was taken over by the Lanston Monotype Machine Co., in January, 1922.

### Dates of Manufacture

| Models | Serials | Year |
|---|---|---|
| 5, 7, 9, 12 | 67,500 | 1923 |
| 7, 9 12 | 66,000 | 1922 |
| 7, 9, 12 | 65,000 | * 1921 |
| 7, 9, 12 | 64,000 | |
| 7, 9, 12 | 61,000 | |
| 12 | 60,000 | 1920 |
| 12 | 14,000* | 1919 |
| 12 | 13,000 | 1918 |
| 12 | 12,000 | 1917 |
| 12 | 11,000 | 1916 |
| 12 | 10,000 | 1914 |
| 6, 10, 12, below 10,000 | previous to 1914. | |

* Serials jump the 63,000 series, and from 14,000 to 60,000. Models 7 and 9 commenced with serial 61,843, June, 1921. Model 5 started around serial 68,000 about May 1st, 1923. Present serials are around 69,000.

Some early models have what is known as the "Mezzanine Attachment" for use in transferring amount set up on keyboard to adjoining columns when multiplying. An X after serial number denotes this attachment. -2 after serial number denotes fractions or feet columns.

### Models and Valuations

**Model and serial numbers** on later models are stamped on the base casting directly in front of the machine. The model follows the serial number. On older models, the serial number only appears, and sometimes is on the bottom of the machine.

| Model | Type | Keyboard Capacity | Total Capacity | Valuation |
|---|---|---|---|---|
| *5 | Listing | 5 columns | 6 columns | $40.00 |
| 6 | Non-listing | 6 columns | 6 columns | 5.00 |
| *7 | Listing | 7 columns | 7 columns | 50.00 |
| *7A | Listing | 7 columns | 8 columns | 50.00 |
| *9 | Listing | 9 columns | 9 columns | 60.00 |
| *9A | Listing | 9 columns | 10 columns | 60.00 |
| *9B | Listing | 9 columns | 11 columns | 60.00 |
| *9C | Listing | 9 columns | 12 columns | 60.00 |
| 10 | Non-listing | 10 columns | 10 columns | 12.50 |
| *12 | Listing | 9 columns | 12 columns with calculating device, below serial 14,000 | 50.00 |
| | | | 60,000 to 65,000 | 40.00 |
| | | | Above 65,000 | 65.00 |
| 14 | Listing | Same as 12 but with wide carriage | | 40.00 |
| *7 ¼ | Listing | Same as 7 but has ¼ fractions in one column | | 45.00 |
| *7 ⅛ | Listing | Same as 7 but has ⅛ fractions in one column | | 50.00 |
| *9 ¼ | Listing | Same as 9 but has ¼ fractions in one column | | 50.00 |
| *9 ⅛ | Listing | Same as 9 but has ⅛ fractions in one column | | 55.00 |

Note: *Indicates current models. Models 6, 10 and 14 have been discontinued.

# BURROUGHS

## System of Numbering

### Class Numbers:

Model numbers, (later referred to as Class numbers) appear on a number plate on the front of all Burroughs machines.

In the early years of manufacture, model numbers were designated No. 1, No. 2, No. 3, etc. At that time the model number had no special significance.

Models No. 6 and No. 7 were the first models on which the model number agreed with the number of columns. After the advent of these two models and until nearly 1915, model numbers, (stamped just before the serial number on the plate), indicated the number of keyboard columns, (such as 13 for a 13 column machine, etc.)

Later, a system of class numbers was originated. The number denoting the class of the machine, was stamped on the number plate, and immediately preceded the serial number, (such as 3-385678, meaning a class 3 or 300, visible model). The 3 or 300 class machines were the first so numbered. The practice became general on other classes, about 1914, commencing with serials (approximately), 260,000. The designations and descriptions of the various classes follow:

**Class 1:** High type, single counter, blind printing, adding and listing machines.
**2:** High type, two counter, blind printing, adding and listing machines.
**3:** Low type, single counter, visible printing, adding and listing machines.
**4:** High type, single counter, visible printing, adding and listing machines with special device for speed in multiplying.
**5:** Key driven calculating machines, non-listing.
**6:** High type, single counter, blind, printing, direct subtracting, adding, listing and bookeeping machines.
**7:** Moon-Hopkins, blind printing, combined adding machine and typewriter, for adding, multiplying, subtracting, listing, billing, and bookeeping, etc.

### Model Numbers:

Model numbers do not appear any place on Burroughs machines (except very old models). Present model numbers are made up of four figures, (such as, 3205).

The model number of any machine may usually be determined by (1) the class of the machine, (2) the number of keyboard columns, (3) the kind of carriage and other equipment.

The model number is made up as follows:

**The class** determines the first figure such as a visible low keyboard machine is of Class 3, therefore, the first figure of its model number would be 3.

**The number of columns of keys** determines the second figure:

0, denotes five columns.
1, denotes seven columns.
2, denotes nine columns.
3, denotes ten columns.
4, denotes eleven columns.
5, denotes thirteen columns.
6, denotes fifteen columns.
7, denotes seventeen columns.

**The kind and size of carriage** and other features determine the last two figures. The last two figures are not uniform for the same features on different classes of machines, therefore, a study of the descriptions shown in the Catalog Section may be necessary to secure an understanding of the meanings of the end figures of model numbers.

## BURROUGHS—continued

### Serial Numbers:

The serial number is stamped on the front of the base of every machine. To provide against the possibility of any confusion in identifying early models from those of modern construction having similar model number designations, the serial numbers assigned to each of the early models are given in detail. It will be noted that the serial numbers of all early models are comparatively low,—in all cases less than 260,000 the approximate lowest serial of machines numbered with class designation.

Until 1914-1915, machines of this make were not numbered in sequence. The practice was to reserve a series of 1,000 to 5,000 numbers (more or less), and assign them to one model, and when that series was exhausted, a new set, in a different series, would be assigned. Thus, as will be noticed, a model will have several groups of serials, sometimes in the same year of manufacture. The intervening numbers were assigned other models.

### Dates of Manufacture:

When the above plan of numbering was abandoned, a regular sequence was maintained; each machine, regardless of its class or model was assigned a consecutive factory number. The following table is an approximation of such serial numbers. The necessity of maintaining sale and consignment stocks of various models, often brings about a

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## BURROUGHS—continued

condition whereby a machine is not sold for many months after its manufacture. Thus it sometimes develops that, judged by actual date of sale, the following table will not appear correct. The dates shown below are believed to be the approximate dates of manufacture.

| Serial | Date | Serial | Date | Serial | Date |
|---|---|---|---|---|---|
| 260,000 | Jan., 1915 | 450,000 | Aug., 1918 | 700,000 | Dec., 1920 |
| 280,000 | Oct., 1915 | 500,000 | May, 1919 | 750,000 | Jan., 1922 |
| 300,000 | May, 1916 | 550,000 | Feb., 1920 | 800,000 | Jan., 1923 |
| 350,000 | Feb., 1917 | 600,000 | May, 1920 | 820,000 | Present Serials |
| 400,000 | Nov., 1917 | 650,000 | Aug., 1920 | | |

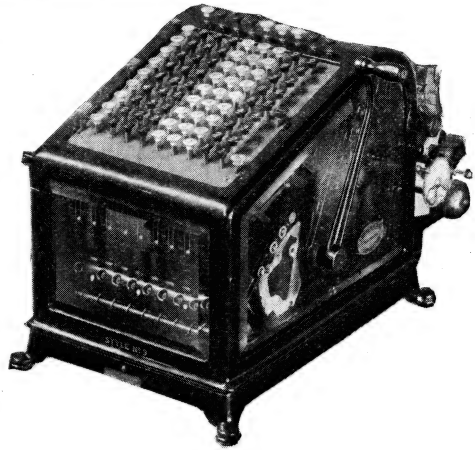
### Carriages

| Name | Taking paper | Description |
|---|---|---|
| Narrow | 2 5/16" to 4" | For roll paper only. Fixed unless otherwise stated. |
| 10-construction | 10¼" | Movable; old type although still furnished on request; platen is somewhat smaller in diameter than later types; bands, serving as paper fingers on platen, restrict printing to definite column positions. |
| 15-construction | 12¼" | Movable; old type; open printing line, (does not have bands as on the 10-construction). |
| 18-construction (Model K) | 18" | An improvement on the 15-construction carriage, (principally in the paper feed). This carriage embodies the features of the carriage on late machines. |
| Shuttle (SC) | 12¼" | Moves automatically each time machine is operated, to print items alternately in adjoining right and left columns. |
| Semi-automatic cross tabulating (SACT) | 12¼" | Tabulates from right to left to column positions, automatically, as items are added. Adjustable stops. |
| Motor Return (MRC) | | A combination of the SACT carriage with a mechanism to return carriage to starting position for first item. Operated automatically from a stop or manually from a button on keyboard. |
| Movable (M) | 12¼" or 18" (or wider) | Regular manually set sliding carriage. With high or low paper table (HB, high back or LB, low back). |
| Split and normal Platen, (S&NP) or Split-Platen (or SP) | 8½" and 3¾" or 12" and 6" | S&NP may be used as a continuous platen, 12¼" long or may be divided, (by a push button) into sections, as shown, each with separate feeds. SP is an 18" platen permanently split into two sections as shown. |
| Injector and Ejector, (I&E) | | A lever attached to platen for rapid feeding and discharge of paper. |

## BURROUGHS—continued
## Descriptions and Valuations

**Note: The first section of Descriptions and Valuations, includes all high construction, blind printing machines having serial numbers below 256,000. All Class 3 machines and high construction, blind printing machines with serials over 256,000 are valued in the second section of this list.**

### High Models, (Blind Printers)



Model No. 9

Blind printing, high models, comprise early types and the present Class One, Class Two and Class Six machines. They have the carriage mounted on the rear. Items and totals are not visible as they are printed; the carriage is hinged at the bottom, and is swung away from the printing point, when it is desired to inspect the work. Totals are visible in the dials in the lower front of case. Models manufactured previous to September, 1905, did not have Non-add feature.

**Model No. 1,** 9 columns adding and listing capacity; combination total and sub-total key; general correction key; repeat key; fixed carriage. Blind printer.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 1-2254 | 3½" | 1895-08 | None |
| 25288-25397 | 3½" | 1906 | $15.00 |
| 25548-26000 | 3½" | 1906 | |

**Model No. 2,** same as No. 1, but had, in addition to the regular ribbon, a second, cross feed ribbon on the carriage and carried a second roll of paper.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 1- 2254 | 3½" | 1895-08 | None |
| 25273-25287 | 3½" | 1906 | |

**Model No. 3,** 9 columns adding and listing capacity; combination total and sub-total key; repeat key; general correction key; 10 construction, movable carriage, taking paper 10¼" wide; equipped with separate column release keys between serials 37,000 to 42,000. Serials below 20,000 did not have shield (containing window openings) over total dials. Blind printer.

**For serials over 256,000 see following pages.**

## BURROUGHS—continued

### Descriptions and Valuations—continued

**(Serials below 256000)**

| Serials | Carriage | Made in | Valuations | Serials | Carriage | Made in | Valuations |
|---|---|---|---|---|---|---|---|
| 4001- 6000 | 10¼" | 1898-00 | | 25223-25272 | 10¼" | 1906 | |
| 8000-17375 | 10¼" | 1900-03 | $10.00 | 25398-25547 | 10¼" | 1906 | $15.00 |
| 17500-19999 | 10¼" | 1907-08 | | 26000-34999 | 10¼" | 1904-06 | |
| 20000-24999 | 10¼" | 1903-04 | | 36000-47999 | 10¼" | 1906-07 | |
| 25089-25100 | 10¼" | 1905 | 15.00 | 48000-49999 | 10¼" | 1908 | 20.00 |
| 25178-25214 | 10¼" | 1906 | | 50500-59999 | 10¼" | 1910-11 | |

**Model No. 4,** 6 columns adding, 7 columns totaling capacity; combination total and sub-total key; general correction key; repeat key; $2\frac{5}{16}$" fixed carriage. Serials below 60,200 did not have shield (containing window openings) over total dials. Blind printer.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 60000-60200 | $2\frac{5}{16}$" | 1903-06 | $ 5.00 |
| 60200-65000 | $2\frac{5}{16}$" | 1903-06 | $10.00 |
| 110750-110999 | Special | 1909-10 | |

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## BURROUGHS—continued

### Descriptions and Valuations—continued

**Model No. 5,** same as Model No. 4, but had a 10 construction, movable carriage, taking paper 10¼" wide. Blind printer.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 50000-50499 | 10¼" | 1903-07 | $15.00 |

**Model No. 6,** 6 columns listing capacity, 7 columns totaling capacity; 10¼" or 12¼" movable carriage; error, repeat and eliminating keys, separate total and sub-total keys; separate column release keys. Some models had a 2 5/16" fixed carriage, and were known as No. 6-N.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 112000-112499 | 2 5/16" | 1908 | Narrow Carriages $10.00 |
| 112500-112549 | 10¼" | 1908 | |
| 112550-112649 | 12¼" | 1908 | |
| 112650-112749 | 10¼" | 1908 | |
| 112750-112849 | 12¼" | 1908 | |
| 112850-112999 | 2 5/16" | 1908 | |
| 116000-116689 | 2 5/16" | 1908 | |
| 116690-116849 | 10¼" | 1908 | Wide Carriages $15.00 |
| 116850-116999 | 12¼" | 1908 | |
| 123000-123999 | 18" | 1909 | |
| 125200-125299 | 12¼" | 1909 | |
| 125300-125699 | 2 5/16" | 1909 | |
| 125700-125749 | 10¼" | 1909 | |
| 132000-132499 | 2 5/16" | 1909 | |
| 132946-132949 | 2 5/16" | 1909 | Narrow Carriages $10.00 |
| 132950-132999 | 10¼" | 1909 | |
| 138000-138299 | 2 5/16" | 1909-10 | |
| 138700-138899 | 2 5/16" | 1910 | Wide Carriages $15.00 |
| 138975-138999 | 12¼" | 1910 | |
| 150200-150247 | 2 5/16" | 1910 | Narrow Carriages $15.00 |
| 150293-150399 | 2 5/16" | 1910 | |
| 150600-150799 | 2 5/16" | 1910 | |
| 150853-150854 | 18" | 1910 | |
| 150855-150999 | 2 5/16" | 1910 | Wide Carriages $20.00 |
| 151171-151211 | 18" | 1910 | |
| 151300-151899 | 18" | 1910 | |
| 151900-151999 | 2 5/16" | 1910 | |
| 157000-158699 | 18" | 1911-13 | |

**Model No. 6-X,** 6 columns listing and totaling capacity; 2 5/16" fixed carriage; error and total (some few machines also had sub-total) key; did not have separate column release keys or repeat key. Side plates were metal.

| Serials | Made in | Valuations |
|---|---|---|
| 125000-125199 | 1909 | $7.50 |
| 125750-125999 | 1909 | |
| 132500-132945 | 1909 | |
| 138300-138699 | 1910 | |
| 138900-138974 | 1910 | |
| 150000-150199 | 1910 | |
| 150248-150292 | 1910 | |
| 150400-150599 | 1910 | $7.50 |
| 150800-150852 | 1910 | |
| 151000-151170 | 1910 | |
| 151212-151299 | 1910 | |
| 155000-156999 | 1911-12 | |
| 210000-211999 | 1912-13 | |

**For serials over 256,000 see following pages.**

*This book will save you money if you use it. Write and tell us what it saved you.*

## BURROUGHS—continued

### Descriptions and Valuations—continued

**Model No. 7,** 7 columns listing and totaling capacity; 10¼" or 12¼" movable carriage; also made with 2 5/16" fixed carriage. Error, repeat and eliminating keys; separate total and sub-total keys; separate column release keys.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 65001- 65101 | 10¼" | 1905-06 | $12.50 |
| 65500- 65999 | 10¼" | 1906 | 15.00 |
| 66000- 67999 | 2 5/16" | 1906-07 | 12.50 |
| 68000- 68499 | 12¼" | 1907 | 17.50 |
| 68500- 69999 | 2 5/16" | 1907-08 | 12.50 |
| 110000-111450 | 2 5/16" | 1908 | 12.50 |
| 111451-111549 | 10¼" | 1908 | 17.50 |
| 111550-111649 | 12¼" | 1908 | 20.00 |
| 111650-111699 | 10¼" | 1908 | 17.50 |
| 111700-111799 | 12¼" | 1908 | 20.00 |
| 111800-111899 | 10¼" | 1908 | 17.50 |
| 111900-111983 | 12¼" | 1908 | 20.00 |
| 111984-111999 | 10¼" | 1908 | 17.50 |
| 115000-115149 | 12¼" | 1908 | 20.00 |
| 115150-115299 | 10¼" | 1908 | 17.50 |
| 115300-115499 | 2 5/16" | 1908 | 15.00 |
| 115500-115559 | 12¼" | 1908 | 20.00 |
| 115560-115599 | 10¼" | 1908 | 17.50 |
| 115600-115699 | 12¼" | 1908 | 20.00 |
| 115700-115799 | 10¼" | 1908 | 17.50 |
| 115800-115999 | 12¼" | 1908 | 20.00 |
| 122000-122999 | 18" | 1908 | $20.00 |
| 124000-124299 | 12¼" | 1908 | 20.00 |
| 124300-124399 | 10¼" | 1908 | 17.50 |
| 124400-124549 | 2 5/16" | 1909 | 15.00 |
| 124550-124699 | 10¼" | 1909 | 17.50 |
| 124700-124799 | 12¼" | 1909 | 20.00 |
| 124800-124999 | 2 5/16" | 1909 | 15.00 |
| 133000-133299 | 2 5/16" | 1909-10 | 15.00 |
| 133300-133499 | 18" | 1910 | 20.00 |
| 133500-133599 | 10¼" | 1910 | 17.50 |
| 133600-133699 | 2 5/16" | 1910 | 15.00 |
| 133700-133999 | 18" | 1910 | 20.00 |
| 139000-139299 | 18" | 1910 | 20.00 |
| 139300-139399 | 2 5/16" | 1910 | 15.00 |
| 139400-139599 | 18" | 1910 | 20.00 |
| 139600-139699 | 2 5/16" | 1910 | 15.00 |
| 139700-139999 | 18" | 1910 | 20.00 |
| 152000-142999 | 18" | 1910 | 20.00 |
| 153200-154999 | 18" | 1911-12 | 20.00 |
| 191000-194999 | 18" | 1912-13 | 20.00 |

**Model No. 9,** 9 columns listing and totaling capacity; 3½" fixed, 10¼" movable, (10 construction), or 12¼" movable (15 construction) carriage. Equipped with separate column release keys, over serial 120,000, and with separate total and sub-total keys over serial 80,000. This model is the predecessor of the present Class One machines. A few of these models (80000-80064) were constructed to print sub-total automatically, on a blank stroke of the handle, without pressing key. Also had non-add, repeat and general correction keys.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 35000- 35584 | 10¼" | 1905-06 | $25.00 |
| 80000- 80064 | 10¼" | 1905-06 | |
| 80200- 82199 | 10¼" | 1906 | |
| 82200- 86999 | 12¼" | 1906-07 | |
| 87000- 89499 | 10¼" | 1907 | |
| 89500- 89999 | 3½" | 1907..... | 20.00 |
| 100000-107999 | 10¼" | 1907-08 | 35.00 |
| 108000-109999 | 12¼" | 1908 | |
| 113000-114999 | 10¼" | 1908-09 | |
| 117000-119999 | 12¼" | 1908-09 | |
| 120000-121999 | 18" | 1908 | $35.00 |
| 126000-126999 | 12¼" | 1909 | |
| 128000-128999 | 10¼" | 1909 | |
| 129000-131999 | 18" | 1909 | |
| 134000-137999 | 18" | 1909-10 | |
| 140000-149999 | 18" | 1910 | |
| 159900-159999 | 18" | 1914 | 40.00 |
| 160000-179999 | 18" | 1911-13 | |
| 255000-255999 | 18" | 1914..... | 50.00 |

**Model No. 11,** same as Model No. 9, except adding and listing capacity was 11 columns.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 90000-90999 | 12¼" | 1906-09 | $40.00 |
| 91000-92999 | 18" | 1908-10 | |
| 93000-94999 | 18" | 1911-12 | |
| 212000-214999 | 18" | 1912-13 | $50.00 |
| 248000-254999 | 18" | 1914 | |

**For serials over 256,000 see following pages.**

## BURROUGHS—continued

### Descriptions and Valuations—continued

**Model No. 13,** same as Model No. 9, except adding and listing capacity was 13 columns.

| Serials | Carriage | Made in | Valuations | Serials | Carriage | Made in | Valuations |
|---|---|---|---|---|---|---|---|
| 70000-70220 | | 1905-06 | | 72000- 72099 | 12¼" | 1909 | |
| 70300-70310 | 10¼" | 1906 | $35.00 | 72100- 72999 | 18" | 1910-12 | $35.00 |
| 70500-70999 | 10¼" | 1906 | | 99000- 99999 | 18" | 1912-13 | |
| 71000-71400 | 12¼" | 1906-08 | | 110500-110749 | Spec. | 1908-10 | |
| 71500-71999 | 18" | 1908 | | 158700-159877 | 18" | 1914 | 40.00 |

**Model No. 15,** same as Model No. 9, except adding and listing capacity was 15 columns.

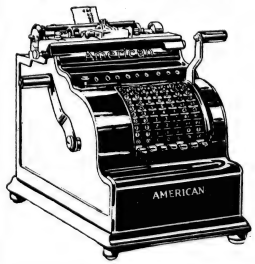
| Serials | Carriage | Made in | Valuations | Serials | Carriage | Made in | Valuations |
|---|---|---|---|---|---|---|---|
| 75000-75269 | | 1905-06 | | 76100-77999 | 12¼" | 1906-09 | |
| 75400-75436 | 10¼" | 1906 | $35.00 | 78000-79999 | 18" | 1908-10 | $40.00 |
| 75600-76099 | 10¼" | 1906 | | 95000-98999 | 18" | 1909-12 | |

**Model No. 17,** same as Model No. 9, except adding and listing capacity was 17 columns.

| Serials | Carriage | Made in | Valuations |
|---|---|---|---|
| 73000- 74999 | 18" | 1910-12 | $40,00 |
| 230000-231999 | 18" | 1913-14 | 50.00 |

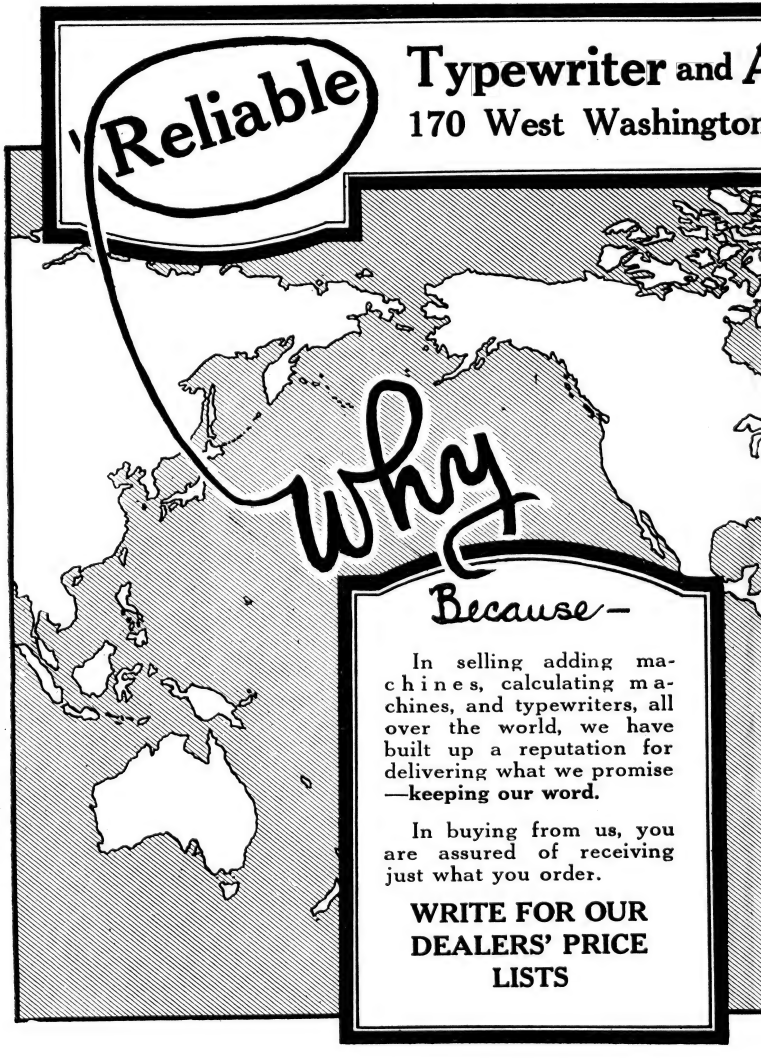

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# BURROUGHS

## Valuations: Class One, High Type, Single Counter, Blind Printing

(For machines with serial numbers below 256,000, see preceding schedule.)

**See Catalog Section for Illustration, Descriptions and Prices of Current Models.**

**Standard Features of all Models:** Total key; sub-total key; non-add key; error key; repeat key; separate column-release keys.

S—denotes Standard Equipment O—denotes Optional Equipment

| New Model No. / Old Model No. | 1201 / 126 | 1203 / 126-SACT | 1205 / 126-TSC | 1401 / 146 | 156 | 166 | 1701 / 176 | 1703 / 176-T |
|---|---|---|---|---|---|---|---|---|
| Keyboard Columns | 9 | 9 | 9 | 11 | 13 | 15 | 17 | 17 |
| Total Columns | 9 | 9 | 9 | 11 | 13 | 15 | 17 | 17 |
| Carriage: M-12¼" | S-LB | {Bank Transit Model}† | {Bank Transit Model}† | S-LB | S-LB | S-LB | S-HB | {Bank Transit Model}‡ |
| M-18" HB | O-HB | | | O-HB | O-HB | O-HB | O-HB | O-HB |
| SC-12¼" | | | S-HB | | | | | |
| SACT-12¼" | | S-HB | | | | | | |
| Injector and Ejector | O | S | S | O | O | O | S | S |
| Unlimited Split | | | | | | | S | S |
| Date, Count and Normal | | | | O | O | O | | |
| Fractions: 8-ths, 12-ths or 16-ths | O | | | O | O | O | O | |
| Electric Drive | O | O | O | O | O | O | S | S |
| Valuations: Under 500,000 | $70.00 | $80.00 | $80.00 | $80.00 | $65.00 | $65.00 | $85.00 | $85.00 |
| (Not widely quoted) 500,000 to 700,000 | 80.00 | 90.00 | 90.00 | 90.00 | 75.00 | 75.00 | 95.00 | 95.00 |
| (Not widely quoted) Over 700,000 | 90.00 | 100.00 | 100.00 | 100.00 | | | 110.00 | 110.00 |
| Electric Drive extra | 10.00 | 15.00 | 15.00 | 15.00 | 15.00 | 15.00 | | |

† denotes Non-add and split feature is carriage controlled. In Non-add position, split for ciphers between 2-3 and 7-8 columns. In add position, or when carriage is normal, totaling and listing capacity is nine columns.

‡ denotes equipped with special characters in first and second columns: TNP, (Telegraph Non-Payment); No Pro. (No Protest); B/l Att. (Bill of Lading Attached).

HB or LB denotes high back or low back carriage.

# BURROUGHS

## Valuations: Class Two, Duplex Models

**See Catalog Section for Illustration, Descriptions and Prices of Current Models**

**Standard Features of All Models:** Total key; sub-total key; transfer total key; non-add key; general error key; repeat key; separate column release keys.

S—denotes Standard Equipment  O—denotes Optional Equipment

| New Model No. / Old Model No. | 216 | 2201 226 | 2203 226-SC | 2401 246 | 2403 246-SC | 2406 246-G | 2408 246-H | 256 | 266 | 2701 276 | 2703 276-T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | MRC | MRC | | | | |
| Keyboard Columns | 7 | 9 | 9 | 11 | 11 | 11 | 11 | 13 | 15 | 17 | 17 |
| Total Columns | 7 | 9 | 9 | 11 | 11 | 11 | 11 | 13 | 15 | 17 | 17 |
| Carriage: M-12¼" | S-LB | S-LB | | S | | | | S | S | | {Bank Transit Model}‡ |
| M-18" | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | O-HB | |
| SC-12¼" | | | S-HB | O | S-HB | | | O | O | S-HB | S-HB |
| SACT-12¼" | | | | | | S-HB | S-HB | | | | |
| MRC | | | | | | S | S | | | | |
| Date Repeat Key | | | | | | | S | | | O | |
| Calendar Feature | S | S | S | O | | | S | O | O | O | |
| Split Platen 18" | | | | | | O | O | | | | |
| Split and Normal Platen 12¼" | | | | | | O | O | | | | |
| Injector and Ejector | O | O | O | S | S | S | S | S | S | S | S |
| Unlimited Split | | | | | S | S | | | | S | S |
| Date, Count and Normal | | | | O | | | | O | O | | |
| Fractions: 8-ths or 12-ths | O | O | O | O | O | O | O | O | O | O | |
| Electric Drive | O | O | O | O | O | | S | O | O | S | S |

**Valuations** range from $100.00 up, but are not generally quoted unless an immediate turn-over is anticipated.

‡ denotes equipped with special characters in first and second columns: TNP, (Telegraph Non-payment); No Pro. (No Protest); B/l Att. (Bill of Lading Attached).

HB or LB denotes high back or low back carriage.

# BURROUGHS

## Valuations: Class Three (Visible Models)

**(See Catalog Section for Illustrations, Descriptions and Prices of Current Models).**

| Model No. New | Model No. Old | Capacity | —Carriage— Paper Width | Style | Fractions | Ribbon | N. A. Key | N. P. Key |
|---|---|---|---|---|---|---|---|---|
| *3001 | (301) | 5-6 | 4″ | F | | 1-col | Yes | No |
| 3002 | (302) | 6-6 | 4″ | F | | 1-col | Yes | No |
| *3119 | | 7-6⅞ | 4″ | F | ⅛ | 1-col | Yes | No |
| *3122 | | 7-6⅞ | 12″ | M | ⅛ | 2-col | Yes | Yes |
| | (310) | 7-7 | 4″ | F | | 1-col | No | No |
| *3105 | (315) | 7-7 | 4″ | 2-pos. | | 1-col | Yes | No |
| 3102 | | 7-6⅞ | 4″ | F | ⅛ | 1-col | No | No |
| | (311) | 7-7 | 12″ | M | | 1-col | No | No |
| | (314) | 7-7 | 12″ | M | | 2-col | Yes | Yes |
| *3118 | (3108) | 7-7 | 12″ | M | | 2-col | Yes | Yes |
| ‡Burroughs-Pike | | 7-7 (See note below) | | | | | | |
| *3221 | | 9-8⅞ | 4″ | F | ⅛ | 2-col | Yes | Yes |
| *3222 | | 9-8⅞ | 12″ | M | ⅛ | 2-col | Yes | Yes |
| 3201 | (320) | 9-9 | 4″ | F | | 1-col | No | No |
| *3217 | (3201) | 9-9 | 4″ | F | | 2-col | Yes | Yes |
| 3205 | (324-GR) | 9-8.55 | 12″ | M | 5-60 | 2-col | Yes | Yes |
| 3202 | (320-L&T) | 9-8⅞ | 4″ | F | ⅛ | 1-col | No | No |
| 3207 | (320-GR) | 9-8.55 | 4″ | F | 5-60 | 1-col | No | No |
| *3218 | | 9-9 | 12″ | M | | 2-col | Yes | Yes |
| 3203 | (321) | 9-9 | 12″ | M | | 1-col | No | No |
| 3204 | (324) | 9-9 | 12″ | M | | 2-col | Yes | Yes |
| 3206 | (324-L&T) | 9-8⅞ | 12″ | M | ⅛ | 2-col | Yes | Yes |
| †Burroughs-Pike | | 9-9 (See note below) | | | | | | |
| †3208‖ | (324-B) | 9-7.3 | 12″ HB | M | | 2-col | Yes | Yes |
| *3321 | | 9-8⅞ | 4″ | F | ⅛ | 2-col | Yes | Yes |
| *3322 | | 9-8⅞ | 12″ | M | ⅛ | 2-col | Yes | Yes |
| *3323 | | 10-10 | 4″ | F | | 2-col | Yes | Yes |
| *3317 | | 10-10 | 4″ | F | | 2-col | Yes | Yes |
| *3325 | | 10-8 11/12 | 4″ | F | 1-12 | 2-col | Yes | Yes |
| 3304 | (334) | 10-10 | 12″ | M | | 2-col | Yes | Yes |
| *3318 | (3304) | 10-10 | 12″ | M | | 2-col | Yes | Yes |
| *3320† | (3305) | 10-8.3 | 12″ HB | M | | 2-col | Yes | Yes |
| *3324 | | 10-10 | 12″ | M | | 2-col | Yes | Yes |
| *3326 | | 10-8 11/12 | 12″ | M | 1-12 | 2-col | Yes | Yes |
| 3307† | (334-E) | 10-7.3 | 12″ HB | M | | 2-col | Yes | Yes |
| 3305† | (334-B) | 10-8.3 | 12″ HB | M | | 2-col | Yes | Yes |

Abbreviations used are:

**Capacity:** The first figure denotes number of keyboard columns; the second figure denotes number of places in total; the fraction after the designation for total capacity indicates total of fraction column. **Carriages:** Style F denotes Fixed; style M denotes Movable. **Fractions:** 5/60 denotes 1/12 fractions with key tops in units of five. **N A Key** denotes non-add feature. **N P Key** denotes non-print feature. **D C & N** denotes Date, Count and Normal device. **D & N** denotes Date and Normal device (does not total to left of split). **S & N** denotes Split and Normal (totals to left of split). **Calendar Keys** denote Date and Month keys for statements. **I & E** denotes Injector and Ejector feature on carriage. **HB** after carriage size denotes High (statement) back.

**Standard Features:** Total and error key (combined); sub-total key; repeat key.

# BURROUGHS

## Valuations: Class Three (Visible Models)

**(See Catalog Section for Illustrations, Descriptions and Prices of Current Models.)**

| D. C. & N. | Sep. Col. Release Keys | D. & N. or S. & N. | Calendar Keys | I. & E. | Elec. Drive | Valuations Under Serials 234,000 | Serials 234,000 500,000 | Serials 500,000 750,000 | Serials over 750,000 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | No | | $45.00 | $50.00 | $55.00 |
| | | | | | No | | 60.00 | 65.00 | 70.00 |
| 1-99 | | | | | No | | | 70.00 | 75.00 |
| 1-99 | | | | | No | | | 75.00 | 80.00 |
| | | | | | No | $65.00 | 70.00 | 75.00 | 80.00 |
| | | | | | No | | | 85.00 | 90.00 |
| 1-99 | | | | | No | 65.00 | 70.00 | 75.00 | 80.00 |
| | | | | | No | 70.00 | 75.00 | 80.00 | 85.00 |
| | Yes | | | | No | 75.00 | 80.00 | 85.00 | 90.00 |
| | | | | | No | | | 90.00 | 95.00 |
| | | | | | | 50.00 | | | |
| 1-999 | | | | | Opt | | | 80.00 | 85.00 |
| 1-999 | | | | | Opt | | | 85.00 | 90.00 |
| | | | | | Opt | 70.00 | 75.00 | 80.00 | 85.00 |
| | | | | | Opt | | | 85.00 | 90.00 |
| 1-9999 | Yes | | | | Opt | | 80.00 | 90.00 | 100.00 |
| 1-999 | | | | | Opt | | 75.00 | 80.00 | 85.00 |
| 1-9999 | | | | | Opt | | 75.00 | 85.00 | 90.00 |
| | | | | | Opt | | | 90.00 | 100.00 |
| | | | | | Opt | 75.00 | 80.00 | 85.00 | 90.00 |
| | Yes | | | | Opt | | 85.00 | 90.00 | 95.00 |
| 1-999 | Yes | | | | Opt | | 82.50 | 85.00 | 90.00 |
| | | | | | | 60.00 | | | |
| 6-7 col | Yes | | Yes | I. & E. | Opt | | 75.00 | 80.00 | 85.00 |
| 1-999 | | | | | Opt | | | 82.50 | 87.50 |
| 1-999 | | | | | Opt | | | 85.00 | 90.00 |
| 1-999 | | | | | Opt | | | 80.50 | 95.00 |
| | | | | | Opt | | | 85.00 | 90.00 |
| 1-9999 | | S. & N. | | | Opt | | | 85.00 | 95.00 |
| | Yes | | | | Opt | | 85.00 | 90.00 | 95.00 |
| | | | | | Opt | | | 90.00 | 100.00 |
| | | D. & N. | Yes | | Opt | | | 85.00 | 90.00 |
| 1-999 | | | | | Opt | | | 95.00 | 105.00 |
| 1-9999 | | S. & N. | | | Opt | | | 90.00 | 100.00 |
| 7-8 col | Yes | S. & N. | Yes | I. & E. | Opt | | 80.00 | 85.00 | 90.00 |
| 7-8 col | Yes | S. & N. | Yes | I. & E. | Yes | | 80.00 | 85.00 | 95.00 |

Extra valuation for electric drive:
On models having serials below 650,000.....$10.00
On models having serials over 650,000..... 20.00

* denotes machines of current models.

† denotes Statement machines.

‡ Models so marked are the early models of Class 300, constructed shortly after the transfer of the tools and dies from the Pike Adding Machine Company to the Burroughs Adding Machine Company. They are numbered below serial No. 186,568 and may be distinguished by five-wheel item counters under a glass, about the size of a half dollar, on the right of the panel directly behind the keyboard. Equipment consists of column release keys without key tops; wide carriage, and total, sub-total, repeat, non-print and non-add keys, visible printing and totals.

## BURROUGHS CLASS FOUR

Visible adding, listing and multiplying machine.
**Standard features:** Total, sub-total, repeat, non-add, non-print and separate column release keys; two-color ribbon, 12" carriage; multiplying keyboard (with lever to shift multiplicand from right to left or left to right while multiplying); electric drive.

| Model | | | Valuations | | |
|---|---|---|---|---|---|
| New No. | Old No. | Listing and Totaling Capacity | Serials Under 200,000 | 200,000 to 500,000 | Over 500,000 |
| 4204 | 424 | 9 columns | $65.00 | $80.00 | $110.00 |
| 4304 | 434 | 10 columns | 75.00 | 90.00 | 120.00 |

## BURROUGHS CALCULATOR

See Calculating Machines.

## BURROUGHS REGISTERING ACCOUNTANT

A full button-key keyboard adding and listing machine made by the American Arithmometer Company, St. Louis, Missouri, predecessors of the Burroughs Adding Machine Company, Detroit, Michigan. It had a narrow, fixed carriage and was similar to the high keyboard Burroughs model No. 1. Valuations not quoted.

**Adding and Calculating Machines**

*All Makes*

**Bought, Sold and Rented**

***All Our Machines are REBUILT and GUARANTEED***

HIGH GRADE REPAIRING DONE
ON ALL MAKES OF MACHINES

We are sure we are best equipped to take care of all kinds of adding machine repairs.
ALL WORK GUARANTEED

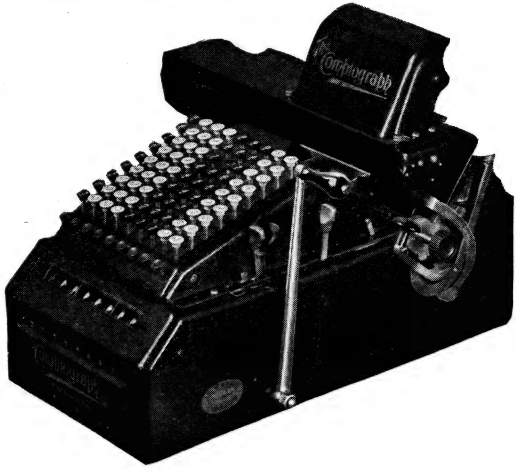
*Established 1915*

**REBUILT ADDING MACHINE CO.**
**333 So. Dearborn St. Phone Harrison 7679**
**CHICAGO, ILL.**
C. O. MAPLE L. P. SIMMONS

## COMMONWEALTH

A ten-key non-listing machine, on which the entire keyboard moved each time a key was depressed. Made by the Commonwealth Adding Machine Company, Muskegon, Michigan. Manufacture has been suspended. No valuations.

## COMPTOGRAPH




Originally manufactured by the Comptograph Company, Chicago. Parts and repair service is now given by Felt & Tarrant Mfg. Company, Chicago, Ill. Original selling price was $275 to $350, depending on extra key equipment; electric drive, $75 extra.

Manufacture has been discontinued for some years.

A heavy, visible wide-carriage machine having a full key, flexible keyboard. Equipped with complements for subtraction; separate column correction keys, Total, Error, Repeat, non-Add, and non-Print keys. Split and normal equipment optional. Other features were a cut-out device built in the front of the case, which functioned as a column cut-out for subtraction; paper-end lock and automatic paper return lever.

### Models and Valuations

| | |
|---|---|
| Serials below 3000 | $ 5.00 |
| Serials above 3000 | 10.00 |

No extra valuation for electric drive.

## DALTON

**(See Catalog Section for Illustrations, Descriptions and Prices of Current Models.)**

A new and improved line of Dalton machines was put on the market in 1921, commencing with serial 100,000, superseding previous models, except model known as the 9-10 Regular, which is still sold.

### Construction

(Serial numbers are approximate)

| | Serial |
|---|---|
| One way ribbon reverse, operated from lever on keyboard, below | 15,000 |
| Automatic ribbon reverse, began | 15,000 |
| Glass side panels, below | 22,000 |

## DALTON—continued

(A few models up to serial 25,000 had glass side panels).

Aluminum case, solid sides, began..... 22,000
P. O. Carriage, having auxiliary feed rolls for small forms, began.. 15,000
New style carriage with improved paper feed, began..... 33,000
Present style of one-piece type, began..... 33,000
Keyboard clear signal, began..... 39,000
Present serials of old type 9-10 regular models, (approximately).... 90,000
Super Models began.....100,000
Present serials of Super Models, (approximately).....135,000

Regular models (old style) had 4", 10", 13" or 18" carriage; two-color ribbon and full keyboard, consisting of combined total and sub-total key; repeat key; eliminating key, (for non-adding of items); correction key, (for general clearing of keyboard); designating key, (for printing the letter "E" opposite items such as non-add, etc.); non-print lever and split feature.*

Special models (old style), were the same as regular models, but did not have the split feature or non-print device.

Extra-special models (old style), had a combination total and sub-total key, repeat key and general keyboard correction key, but did not have the non-print device, split feature, eliminating (non-add) key or designating key.

*The split feature was a device in front of type hammers, with adjustments to allow machine to be split so as to add and print totals of two columns simultaneously, or dates and the total of one column.

### Dates of Manufacture

(Serial numbers are approximate)

**Old Style Models**

| Year | Serials | Year | Serials | Year | Serials |
|---|---|---|---|---|---|
| 1909 | and previous, to 5,000 | 1914 | ...21,000 to 24,000 | 1919 | ...48,000 to 62,000 |
| 1910 | ..... 5,000 to 8,000 | 1915 | ...24,000 to 28,000 | 1920 | ...62,000 to 76,000 |
| 1911 | ..... 8,000 to 12,000 | 1916 | ...28,000 to 33,000 | 1921 | ...76,000 to 84,000 |
| 1912 | .....12,000 to 16,000 | 1917 | ...33,000 to 39,000 | 1922 | ...84,000 to 88,000 |
| 1913 | .....16,000 to 21,000 | 1918 | ...39,000 to 48,000 | 1923 | ...89,000 and over |

**Super Models**

1921 and 1922....100,000 to 111,000 1923.....112,000 to 130,000

### Valuations

Serial numbers appear:

On old style models on a plate at the front or rear of case. A secret serial number is also stamped on the inside of the base, toward the front, right side, under a strut supporting the stroke ratchet mechanism, between the inner and outer frames. It can be seen by removing the screws and lifting the strut.

On super models, directly under the main shaft and handle.

| **Old style:** | **6-col.** | **7-col.** | **9-col.** |
|---|---|---|---|
| Serials below 5,000 | $15.00 | $20.00 | $25.00 |
| 5,000 to 25,000 | 17.50 | 25.00 | 30.00 |
| 25,000 to 39,000 | 20.00 | 30.00 | 35.00 |
| 39,000 to 84,000 | 25.00 | 35.00 | 40.00 |
| Over 84,000 | | | 50.00 |

| **Super models:** | **11 or 13-col.** | | |
|---|---|---|---|
| Any serial | $75.00 | 40.00 | 50.00 | 60.00 |

Above valuations are for any style of carriage and any arrangement of keyboard. Until a short time ago, an extra valuation was usual for wide carriage models.

## DUCO




Was put on the market in 1919 by the Duco Adding Machine Company, St. Louis, Mo., but is not at the present time being manufactured. (It is understood that a company has been organized in Denver, Colorado, to manufacture an improved model of this machine.)

In design it is similar to lever operated machines, except that instead of having levers, the columns of the keyboard are recessed, allowing the finger to be inserted at the number it is desired to add. When the finger is pulled down, the entire column moves down with it and stays in position indicating the set-up or allowing a correction to be made until the operating handle is pulled. It has 10 columns for adding and totalling. Narrow carriage. Equipped with a symbol printing non-add key; two-color ribbon and separate column correction keys. Weight 37 pounds. Originally sold for $150.00; standard valuations are not generally quoted.

## FEDERAL

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models)**

The Federal Adding Machine Corporation went into the hands of a receiver and was sold to a new organization of the stockholders in February, 1923, who will operate under the name Federal Adding Machines, Incorporated, address, 33 East 21st Street, New York City.

### Models and Valuations

Models and serial numbers are stamped on base inside the machine and may be seen through the front glass panel. The highest serial numbers were about 8000.

| Model | Valuations |
|---|---|
| Federal "A" Visible, or White, 7 columns, hand or electric | $30.00 |
| Federal "A" Visible, or White, 9 columns, hand or electric | 40.00 |
| Federal "B" nine-key bookkeeping machine | None |

## INTERNATIONAL

Originally made by International Money Machine Company, Reading, Pennsylvania. Production has been suspended and the company dissolved.

International machines were made in straight adding and listing models and as combination adding, listing and payroll denominating and paying machines. The same adding machine unit was embodied in both machines.

The straight adding and listing machine had a full button-key, flexible keyboard, crank (hand or motor) operated, one hand operation; visible adding and printing; no spacing stroke necessary to take total. Built on the unit principle of construction. Made in narrow and 12-inch carriage models. Operating equipment consisted of repeat, error, total, sub-total, non-add and non-print keys.

The payroll machine was designed to list, add and denominate a payroll, imprint the amount, on the pay envelope, count out the money (in gold or silver coins), balance the cash and keep a printed record of each

## INTERNATIONAL—continued

operation. The denominating attachment consisted of a number of separate unit-counters which would automatically add the number of coins of each denomination required to make up the amount to go in the pay envelope. The changer unit worked in conjunction or independently of the denominating unit. It was comprised of channels of the sizes of the various denominations of coins, from which coins were paid automatically into envelopes, as the amount due the employee was registered on the adding machine unit. An extra set of type in the adding machine printer section, imprinted the amount of pay on each envelope at the same time as the regular tally strip was printed.

### Models and Valuations

| | Valuation |
|---|---|
| 9 columns, 12-inch carriage model; (originally sold for $250.00) | $25.00 |
| 9 columns, Narrow carriage; (originally sold for $225.00) | 15.00 |
| 9 columns, Payroll model, with separate set of type for imprinting amount on payroll envelope; electrically operated; (originally sold for $525.00) | 20.00 |
| 9 columns, Payroll model with attachment for denominating payrolls without envelope printing feature | 15.00 |
| 9 columns, Payroll model with denominator and coin changer for selecting and paying gold and silver coins directly into payroll envelopes | 20.00 |
| 9 columns, Payroll model with distributor, changer and envelope printing features | 20.00 |

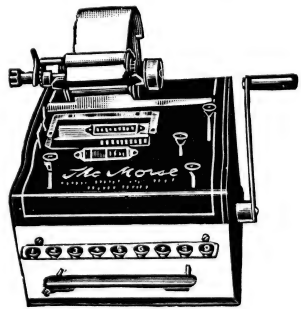
## MALLMAN

Formerly made by the Mallman Addograph Manufacturing Company, Chicago, Illinois. Manufacture has been discontinued.

A nine column, full button-key keyboard machine, having a 10-inch carriage and was similar in general appearance to the Wales except that it was blind in operation. Originally sold for $250.00. Valuation.....$5.00

## MORSE

Formerly made by Morse Adding Machine Company, Chicago, Illinois. Manufacture has been discontinued.



A ten key, narrow carriage, handle operated, adding and listing machine. Printing is blind, items being read by raising carriage. Equipped with a set of visible total dials and keyboard register dials in which amount of set-up is visible before printing. One color ribbon with automatic reverse; total, sub-total, error and repeat keys; 8 inches square; 6 inches high; weight 16 pounds. Originally sold for $125.00.

### Models and Valuations

| | |
|---|---|
| One model only, 9 columns listing and totaling capacity, taking 2 5/16 inch roll paper | $5.00 |

## PETERS

**(See Catalog Section for Description, Illustration and Prices of Current Model)**

### Models and Valuations

10 column, wide carriage, handle operated.....Valuation, $50.00

## PIKE

Original Pike adding machines were made commencing 1904, by Pike Adding Machine Company, Orange, New Jersey. The company was taken over by the Burroughs Adding Machine Company, Detroit, Michigan, in 1909, and the design developed into the present Burroughs Class 300 machines.

Original Pike models, of which there are many still in use, bear the name "Pike" on the case. Some have a dial directly in front of the printing point to count number of items added. While the printing is visible, the printing point is somewhat out of the line of vision from an operating position, due to the contour of the case necessary to mount the dial counter.

Equipment consists of a 12-inch movable carriage; repeat, non-add, total and sub-total keys; visible total dials; separate column release keys at top of keyboard.

### Models and Valuations

| Model | Description | Valuation |
|---|---|---|
| S | 7 columns | $15.00 |
| E | 8 columns | 15.00 |
| N | 9 columns | 20.00 |
| T | 10 columns | 20.00 |

## QUENTELLE

**(See Catalog Section for Illustration, Description and Prices of Current Models.)**

Production has not been established in sufficient quantities to determine any used valuations. In the absence of specific valuations, the list prices in the Catalog Section may be used as a guide.

## STAR

Formerly made by the Accounting Machine Company, Incorporated, New York City, as the "Amco". When the Todd Protectograph Company, Rochester, New York, took over its manufacture and sale in 1922, they renamed it the Star. (See Catalog Section for illustration, description and list price.)

Parts and repair service furnished for both Amco and Star by the Todd Protectograph Company; for Amco only by the Office Appliance & Equipment Company, 19 Park Row, New York City.

### Models and Valuations

| Model | | Valuation |
|---|---|---|
| Amco, | 7 column | $ 5.00 |
| Amco, | 9 column | 10.00 |
| Star, | 9 column | 12.50 |

## STANDARD

Made until recently by the New Standard Adding Machine Company, 1827 Pine Street, St. Louis, Missouri. Manufacture has been discontinued, but parts, repair and rebuilding service is still provided, and a limited quantity of new machines are still offered for sale.

A visible adding and listing machine, key set, handle operated having the ten-key principle of operation, but with an extra row of ten keys called "Column keys," one of which has to be depressed to designate the column order before the first numeral key of an item can be depressed. Thus to register $1.35, the column key in the units of dollars column (the third key from the right) would be depressed to allow the amount designated on the numeral keys to start in that column.

The paper tape is enclosed within the machine and impressions are made by type striking from the rear against a ribbon in front of the paper.



Model B

Made in 9 columns capacity, narrow carriage. Originally sold for $150.00. The last model was Model K, made since 1914. Model B (illustrated) was produced from 1904 to 1913. There was also a model E. All models were similar in design and operation.

### Models and Valuations

| Model | Description | Valuation |
|---|---|---|
| B | 9 columns, Total and sub-total lever, error key | $ 5.00 |
| E | 9 columns, Total and sub-total lever, error lever | 5.00 |
| K | 9 columns, Total and sub-total lever, error lever | 10.00 |

## SUNDSTRAND

**(See Catalog Section for Illustration, Description and Prices of Current Models.)**

### Models and Serial Numbers

Early in 1923 the system of numbering Sundstrand machines was changed. For convenience in identifying models, both numbers are shown in the following schedule of valuations. Model and serial numbers are stamped on a metal plate attached to the rear of the machine. A secret number is stamped inside of the base under the cover and under a support fastened to the base on the right side near the total handle. By removing the two screws and moving the support aside, the serial number can be seen stamped on the smooth surface. Knowledge of the location of this serial number will allow of establishing the correct serial number of the machine when the outside plate is missing.

## SUNDSTRAND—continued

The early form of model numbering utilizes model letters instead of model numbers. The present system of numbering is made up of three groups of numbers, such as: 902-22-7. The entire first group indicates the class and style of the machine. The first figure of the first group denotes keyboard capacity. When the first group of numbers ends in 00 (even 100's), it denotes straight adding machines. First numbers ending in 02, denote statement models. Numbers ending in 20, denote direct subtractor models. Numbers ending in 12 are 1/12 fraction models.

The second group of numbers denotes the feature keys on keyboard. 21 denotes full keyboard; 22 denotes stripped keyboard; 51 denotes a direct subtractor keyboard.

The last group denotes the length of the carriage in inches.

### Construction

Sundstrand machines were first put on the market in 1914. Important changes in interior construction were made at serial No. 10,000, when soft parts were eliminated, and again at serial No. 16,500 when a heavier construction was adopted. Direct subtracting models were placed on the market in September, 1923, at serial No. 54,869.

### Dates of Manufacture

| Model | June 1915 to June 1916 | June 1916 to June 1917 | June 1917 to June 1918 | June 1918 to June 1919 |
|---|---|---|---|---|
| A-6-col. | | | | 10001-15270 |
| AS-6-col. | | | 7001-7377 | 10001-15270 |
| A-7-col. | 1001-1267<br>2001-2164 | 2165-3020 | 3021-3835 | 1701-1708<br>3836-3855<br>3856† |
| B-7-col. | 1001-1088<br>2001-2079 | 2080-2313 | 2314-3094<br>40001-40003 | 1801-1802<br>3095-3106<br>10001-15270 |
| BM-7-col. | 2001-2003 | | 2004-2011 | 10001-15270 |
| BS-7-col. | 1111-1305 | | | 10001-15270 |
| C-9-col. | 1306-1723<br>2001-2287 | 2288-3549<br>1729-1730 | 1731-1774<br>3550-4780 | 1901-1922<br>4781-4848<br>4849-4880†<br>10001-15270 |
| CS-9-col. | | 2001-2143 | 2144-2557 | 2558-2573<br>2574-2578†<br>10001-15270 |
| CF-9-col. | | 2001-2029 | 2030-2040 | 10001-15270 |
| CM-9-col. | | 4781-4848 | 2045-2139 | 2140-2142<br>10001-15270 |
| CSM-9-col. | | | 2001-2009 | 10001-15270 |
| D-9-col. | | | 1401-1429 | 1430-1432 |

June 1919 to Jan. 1920, Serials from 15271 to 19000 (approximately)
Jan. 1920 to Jan. 1921, " " 19000 to 25000 ( " )
Jan. 1921 to Jan. 1922, " " 25000 to 32000 ( " )
Jan. 1922 to Jan. 1923, " " 32000 to 40000 ( " )
Jan. 1923 to Jan. 1924, " " 40000 to 60000 ( " )

*Denotes serials from June 1914 to June 1915. †Denotes serials from June 1919 to June 1920.

## SUNDSTRAND—continued

### Sundstrand Valuations

**Stripped Keyboards** have non-add, total and repeat keys.

**Full Keyboards** have non-add, total, repeat, non-print and lock keys, and error or back spacer key.

**Subtraction Models** have subtraction key in place of the lock key.

The first figure of capacity denotes the listing capacity in columns; the second figure denotes the number of places in total.

| Model Number Old | New | Capacity | Carriage | Keyboard | Valuations Below 10000 | 10001 to 16500 | 16500 to 32000 | 32000 to 54800 | Over 54800 |
|---|---|---|---|---|---|---|---|---|---|
| A | 600-22-5 | 6-6 | 5″ | Stripped | | $30.00 | $35.00 | $40.00 | $45.0 |
| AS | | 6-6 | 5″ | Total and repeat only | $30.00 | | | | |
| A | | 7-7 | 7″ | Stripped | 35.00 | | | | |
| BS | 700-22-5 | 7-7 | 5″ | " | 30.00 | 40.00 | 45.00 | 50.00 | 55.00 |
| HS | | 8-8 | 5″ | " | | | | 55.00 | 60.00 |
| | 902-22-7 | 9-7 | 7″ | " Statement Model | | | | | 50.00 |
| CS | 900-22-5 | 9-9 | 5″ | " | 35.00 | 45.00 | 50.00 | 55.00 | 60.00 |
| JS | 1000-22-5 | 9-10 | 5″ | " | | | 50.00 | 60.00 | 65.00 |
| | 1100-22-5 | 9-11 | 5″ | " | | | | | 65.00 |
| B | 700-21-5 | 7-7 | 5″ | Full | 35.00 | 45.00 | 50.00 | 55.00* | 60.00 |
| | 720-51-7 | 7-7 | 7″ | " Direct Subtractor | | | | | 100.00 |
| H | | 8-8 | 5″ | " | | | | 60.00 | 65.00 |
| | 820-51-7 | 8-8 | 7″ | " Direct Subtractor | | | | | 110.00 |
| | 902-21-7 | 9-7 | 7″ | " Statement Model | | | | | 60.00 |
| C | 900-21-5 | 9-9 | 5″ | " | 40.00 | 50.00 | 55.00 | 60.00 | 65.00 |
| LM | | 9-9 | 5″ | " Loaned Machine | None | None | None | None | None |
| D | | 9-9 | 5″ | " | 40.00 | | | | |
| | 920-51-7 | 9-9 | 7″ | " Direct Subtractor | | | | | 120.00 |
| J | 1000-21-5 | 9-10 | 5″ | " | | | 55.00 | 60.00 | 65.00 |
| | 1100-21-5 | 9-11 | 5″ | " | | | | | 70.00 |

*Except serials 40001 to 40003 inclusive.

#### Valuations of Extra Features

**Note:** Abbreviations denoting feature appear in combination with model designation, such as:

M, denotes motor drive; on Model C, motor drive, the designation would be CM.

ST, denotes statement device; on Model C with statement device, it would appear CST.

On later models, designated by a number, the designation of the feature is incorporated in the model number, such as:

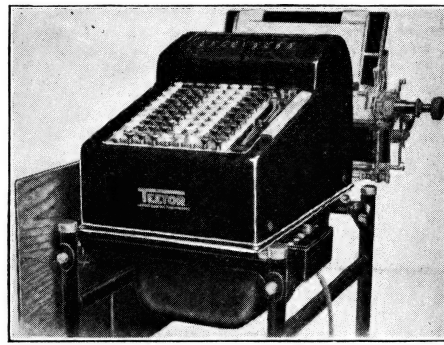
50 added to the regular model number denotes motor drive; thus, a Model 920, motor drive, would appear Model 970.

Model 920, equipped with statement feature would appear Model 902.

| | | Valuations Serials under 40,000 | Serial over 40,000 |
|---|---|---|---|
| Motor Drive | | $10.00 | $20.00 |
| Statement Feature: | 2 columns on left printing special characters, deduct. | 10.00 | 10.00 |
| Fractions: | Quarters, eighths | none | none |
| | Twelfths | 10.00 | 10.00 |
| Carriages: | 8½″ denoted by figure 1 following model | none | none |
| | 5″ " " " 5 " " | none | none |
| | 10″ " " " 10 " " | none | 5.00 |
| | 13″ " " " 13 " " | 5.00 | 10.00 |
| | 18″ " " " 18 " " | 5.00 | 10.00 |

## TEETOR

Made by Teetor Adding Machine Company, formerly of Des Moines, Iowa; now located at Pomona, California. Production temporarily suspended.




A full button-key keyboard, electrically operated adding, listing and direct subtracting machine, equipped with wide movable carriage; visible adding wheels, blind printing.

The design embodies sectional unit construction of type and printing sections, with column sections of each unit interchangeable; electric operating motor also serves as a governor. One hand operation controlled by non-add, repeat, sub-total, total and combination add-subtract levers. One color printing, with signals for all feature operations.

### Models and Valuations

| | Valuation |
|---|---|
| Made in one model only, 9 columns, electrically operated | $35.00 |

## VICTOR

**(See Catalog Section for Illustrations, Descriptions and Prices of Current Models)**

The non-listing model was discontinued the early part of 1921. It had a full, flexible keyboard like the listing model, and repeat and clearing key; 8 column capacity. Originally sold for $85.

The regular listing model machine has metal ring key tops the same as are used on typewriters. The wide carriage model has composition key tops of regular adding machine appearance and design.

### Dates of Manufacture and Valuations

Model numbers do not appear. Serial numbers are stamped on bottom of base. Present serial numbers are around 49,000.

| Year | Serials | Valuation |
|---|---|---|
| 1919 | Below 2,000 | $20.00 |
| 1920 | 2,000 to 3,500 | 25.00 |
| 1921 | 3,500 to 8,000 | 30.00 |
| 1922 | 8,000 to 20,000 | 35.00 |
| 1923 | Over 20,000, reg. model | 40.00 |
| | Wide Carriage | 50.00 |
| | Calculator Model, regardless of serial number | 12.50 |




Calculator Model

## UNIVERSAL

Originally made by Universal Adding Machine Company, St. Louis, Missouri; acquired in 1908 by Burroughs Adding Machine Company, Detroit, Michigan, who still render repair and parts service. Has not been manufactured for years.

A blind printing machine, made in 7 and 9 columns capacity. It has a full button-key keyboard, wide blind (raise-up) carriage, individual column correction keys, Total, Error, Repeat and non-Add keys. It originally sold for $300; electric drive $75 extra.




### Models and Valuations

Model numbers appear on paper table.

Model No. 4, serials up to 2029.$10.00

Model No. 5, serials above 3000.....$15.00

## WALES

### Construction

(Serial numbers are approximate)

| | Serial |
|---|---|
| Model 13: Non-add and non-print keys do not return to normal after hand pull; (they have to be lifted up), below | 10,000 |
| 10 Series: Not numbered, but included all models known as 10 to 19 inclusive. Glass sides; single key for total and sub-total, between | 10,000 to 33,795 |
| 20 Series: All models numbered 20 to 29 inclusive. Steel sides; separate keys for total and sub-total, above | 33,795 |
| Portables: All models numbered 100 to 109 inclusive. Begin at | 70,000 |

## WALES—continued

### Dates of Manufacture

(Serial numbers are approximate)

| Year | Serial | Year | Serial | Year | Serial |
|---|---|---|---|---|---|
| To 1909 | 9,000 | 1914 | 33,000 | 1919 | 64,000 |
| 1910 | 15,000 | 1915 | 34,000 | 1920 | 72,000 |
| 1911 | 20,000 | 1916 | 42,000 | 1921 | 74,000 |
| 1912 | 25,000 | 1917 | 49,000 | 1922 | 79,000 |
| 1913 | 28,000 | 1918 | 53,000 | 1923 | 81,000 |

**Note:** The above serial numbers represent the highest serial numbers (approximately) on machines sold during each year. In a great many cases it will probably be found that numbers much lower than those above given for each year, appear on machines sold in corresponding years. It appears that quite a few machines may have been numbered with serials from earlier serial groups, that had not been used in the regular order.

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***Adding Machines***

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## WALES—continued

### Valuations

*Denotes current models; †These models are now known as the 300 class; ‡These models are now known as the 400 class.

| Type | Model No. | Capacity | Carriage | Printing | NA and NP Keys | | Valuations |
|---|---|---|---|---|---|---|---|
| Regular | 13 | 9 | 13″ | 1-col | Yes | Serials below 10,000 | $20.00 |
| " | 10 | 9 | 13″ | 2-col | Yes | Serials 10,001 to 33,795 | 35.00 |
| " | 10B | 9 | 5″ | 2-col | Yes | " " " " | 35.00 |
| " | 11 | 9 | 13″ | 1-col | Yes | " " " " | 30.00 |
| " | 11B | 9 | 5″ | 1-col | Yes | " " " " | 30.00 |
| " | 12 | 9 | 13″ | 2-col | No | " " " " | 35.00 |
| " | 12B | 9 | 5″ | 2-col | No | " " " " | 35.00 |
| " | 14 | 9 | 13″ | 1-col | No | " " " " | 30.00 |
| " | 14B | 9 | 5″ | 1-col | No | " " " " | 30.00 |
| " | 15 | 7 | 13″ | 2-col | Yes | " " " " | 30.00 |
| " | 15B | 7 | 5″ | 2-col | Yes | " " " " | 30.00 |
| " | 16 | 7 | 13″ | 1-col | Yes | " " " " | 25.00 |
| " | 17 | 7 | 13″ | 2-col | No | " " " " | 30.00 |
| " | 17B | 7 | 5″ | 2-col | No | " " " " | 30.00 |
| " | 19 | 7 | 13″ | 1-col | No | " " " " | 25.00 |
| " | 19B | 7 | 5″ | 1-col | No | " " " " | 25.00 |

| | | | | | | Serials 33,800 to 70,000 | Over 70,000 |
|---|---|---|---|---|---|---|---|
| Regular | *20 | 9 | 13″ | 2-col | Yes | $60.00 | $50.00 |
| " | *20B | 9 | 5″ | 2-col | Yes | 55.00 | 50.00 |
| " | 21 | 9 | 13″ | 1-col | Yes | 45.00 | 40.00 |
| " | 22 | 9 | 13″ | 2-col | No | 50.00 | 45.00 |
| " | 22B | 9 | 5″ | 2-col | No | 50.00 | 45.00 |
| " | 24 | 9 | 13″ | 1-col | No | 45.00 | 40.00 |
| " | 24B | 9 | 5″ | 1-col | No | 45.00 | 40.00 |
| " | *25 | 7 | 13″ | 2-col | Yes | 50.00 | 45.00 |
| " | *25B | 7 | 5″ | 2-col | Yes | 50.00 | 45.00 |
| " | 26 | 7 | 13″ | 1-col | Yes | 45.00 | 40.00 |
| " | 26B | 7 | 5″ | 1-col | Yes | 45.00 | 40.00 |
| " | 27 | 7 | 13″ | 2-col | No | 50.00 | 45.00 |
| " | 29 | 7 | 13″ | 1-col | No | 45.00 | 40.00 |
| " | 29B | 7 | 5″ | 1-col | No | 45.00 | 40.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Duplex | *†30 | 11 | 13″ | 2-col | Yes | Any serial | Not quoted |
| Duplex Statement | *†31 | 11 | 13″ | 2-col | Yes | " | " |
| Regular | *‡40 | 11 | 13″ | 2-col | Yes | " | $50.00 |
| Statement | *‡41 | 11 | 13″ | 2-col | Yes | " | 50.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Portable | 102 | 6-6 | 5½″ | 1-col | NA only | " over 70,000 | 40.00 |
| " | *103 | 7-6 | 5½″ | 1-col | NA only | " " " | 45.00 |
| Duplex Portable | *105 | 7-6 | 5½″ | 1-col | NA only | " " " | 50.00 |
| " | *106 | 6-6 | 5½″ | 1-col | NA only | " " " | 45.00 |
| " | *107 | 7-7 | 5½″ | 1-col | NA only | " " " | 50.00 |
| Duplex " | 108 | 6-6 | 5½″ | 1-col | NA only | " " " | 50.00 |
| Duplex " | *109 | 7-7 | 5½″ | 1-col | NA only | " " " | 50.00 |

### Valuations of Features

Statement models, (except where specified).....Deduct $10.00
Fraction models .....Deduct 10.00
18″ carriage models.....No extra valuations
Electric drive, DC motor.....extra $10.00
AC motor .....extra 15.00

# Calculating Machines

Except as shown, valuations for calculating machines are not generally quoted. Their re-sale requiring special knowledge of their application and uses, makes their handling a specialized proposition. The different manufacturers are reluctant to offer exchange allowances on machines of makes other than their own, and dealers to whom the great bulk of traded in machines of other kinds usually go, do not care to handle calculating machines except at prices that are exceedingly small. Such valuations as it has been possible to secure, in practically every case, have been so low as against the original price of new calculating machines, that the publishers do not feel warranted in quoting them.

The makes on which valuations are quoted herewith, enjoy a more active market.

## BURROUGHS CALCULATOR

**(For illustration and description of current models, see "Calculating Machines," Catalog Section.)**

### Models and Valuations

| Capacity | | Model | | Valuations | | |
|---|---|---|---|---|---|---|
| Keyboard | Total | New No. | Old No. | | | |
| 9 cols. | 10 places | .... | 520 | Any serial..... | | $ 10.00 |
| 13 cols. | 14 places | .... | 550 | Any serial..... | | 12.50 |
| | | | | Under 400,000 | 400,000 to 700,000 | Over 700,000 |
| 9 cols. | 10 places | 5205 | 525 | $40.00 | $47.50 | $55.00 |
| 13 cols. | 14 places | 5505 | 555 | 50.00 | 60.00 | 75.00 |

**Fraction Models:** Deduct from the valuation shown for the corresponding model number.....$ 10.00




The old style Calculator is here illustrated. While there are some mechanical changes, the principally noticed difference is in the design of the case. Old style Calculators (Models No. 520 and 550) were not numbered above serial No. 238, 921.

## COMPTOMETER

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models)**

All models made in 8, 10 and 12 keyboard column sizes, with total capacity of one extra column.

Model numbers do not appear. Model is determined by serial number which is stamped on case either directly below first row (numeral 1) keys on keyboard, or to left of keyboard at numeral 2 row of keys.

### Models, Descriptions and Valuations

| | Valuations | | |
|---|---|---|---|
| | 8-Col. | 10-Col. | 12-Col. |
| Wooden box model, placed on market 1887; serials below 15,000; simplex construction, knob reset, springs around key stems | none | none | none |
| Model A, placed on market 1903. Serials 15,000 to 25,000. Glass slab dial cover, duplex | $ 10.00 | $ 10.00 | $ 10.00 |
| Model B, placed on market 1906. Serials 25,000 to 35,000. Rounded case front, same as on all later models; noisy cancel; duplex | 17.50 | 20.00 | 25.00 |
| Model C, placed on market 1909. Serials 35,000 to 40,000. Heavy action and key depression, composition key tops; quieter cancel than B; duplex | 30.00 | 35.00 | 35.00 |
| Model C, serials 40,000 to 49,000. Light action and key depression; celluloid key tops; duplex | 40.00 | 40.00 | 45.00 |
| Model D, serials 49,001 to 49,154. A combination of principles of Models C and E | none | none | none |
| Model E, placed on market 1913. Serials 50,000 to 59,000. First controlled key model; had oblong key tops to which were attached metal side plates forming the locking feature; key stems are combination of round rod with usual flat stems . Release key situated at right of first column 9 key, has white top; duplex | 20.00 | 20.00 | 20.00 |
| Model F, placed on market 1914. Serials 59,000 to 100,000. Controlled key, duplex, converted Model E. Metal side plates and odd shaped key stems were removed from E models and flat key stems substituted; white release key | 60.00 | 60 00 | 65.00 |
| Model F, placed on market 1914. Serials 100,000 to 200,000. Controlled key; flat key stems; red release key; duplex | 80.00 | 90.00 | 100.00 |
| Model H, placed on market 1920. Serials over 200,000. Controlled key; duplex; red release key; reset lever is set perpendicularly; resets by forward pull only, having automatic spring return; bell, keyboard and dial clear signals; dials when clear show upper half only of ciphers. See catalog section for complete description. Present serials are at approximately 238,000 | 110.00 | 125.00 | 135.00 |

(All serial numbers are approximate).

## BRUNSVIGA

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models)**

| Models | Valuations |
|---|---|
| Standard, any capacity | $20.00 |
| Midget, any capacity | 25.00 |

(Valuations not generally quoted.)

## LEHIGH

The Lehigh was sold until about the beginning of 1923, by the Lehigh Corporation, 25 West Forty-third street, New York City.

It is a lever set-up machine of the Odhner type, having a movable carriage with two sets of accumulator dials and an extra set of set-up check dials just above the keyboard. It is crank operated.

It was manufactured in but one model, having a capacity of 12 places in the keyboard, 20 places in the large set of dials and 12 places in the small. Selling price was in the neighborhood of $300. Valuations are not generally quoted.

## MARCHANT

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models)**

The Marchant lever-set Standard and Pony models were discontinued late in 1922, and have been superseded by the X-L lever-set and button-key keyboard models, described and illustrated in the Catalog Section.

Pony and Standard models follow the rotary or direct action principle of construction, having a lever-set keyboard, a movable carriage with two sets of dials, and are operated by a crank, adding on the forward and subtracting on the backward turn, with one stopping position (at the lowest point of revolution).

Both models are of the same construction and have the same equipment, excepting that the Standard is the heavier and larger machine and the Pony is light weight and compact, and the Pony (with the exception of the first models) has an extra set of dials, called check dials, above the keyboard on which the amount of the set-up is indicated.

### Dates of Manufacture and Valuations

(Valuations not generally quoted for lever-set models.)

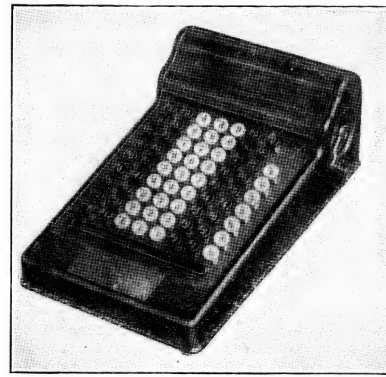
| Model | Began | No. Series | Capacity | Description | Valuations |
|---|---|---|---|---|---|
| Standard—A | 1911 | 100 | 9x 8x13 | | $10.00 |
| Standard—B | 1911 | 900 | 9x10x18 | | 10.00 |
| Pony—A | 1917 | 0100 | 9x 8x13 | No register dials | 5.00 |
| Pony—A | 1919 | 05000 | 9x 8x13 | With register dials | 10.00 |
| Pony—A | 1920 | 60000 | 9x 8x13 | With register dials, new crank lock | 15.00 |
| Pony—A | 1921 | 65000 | 9x 8x13 | With register dials, improved crank lock | 15.00 |
| Pony—A | 1922 | 80000 | 9x 8x13 | Non-rotating key levers | 20.00 |
| Pony—B | 1917 | 01000 | 9x10x18 | No register dials | 5.00 |
| Pony—B | 1919 | 05500 | 9x10x18 | With register dials | 10.00 |
| Pony—B | 1920 | 70000 | 9x10x18 | With register dials, new crank lock | 15.00 |
| Pony—B | 1921 | 75000 | 9x10x18 | With register dials, improved crank lock | 15.00 |
| Pony—B | 1922 | 81000 | 9x10x18 | Non-rotating key levers | 20.00 |
| Keyboard KA | 1923 | 50000 | 6x 6x12 | Button keyboard | 75.00 |
| Keyboard KB | 1923 | 30000 | 8x 8x16 | Button keyboard | 85.00 |
| Keyboard KC | 1923 | 1000 | 9x 9x18 | Button keyboard | 90.00 |

(Serial numbers are approximate).

Original Prices: Pony—A, $275.00; Pony—B, $325.00; Standard—A, $265.00; Standard—B, $315.00.

## MECHANICAL ACCOUNTANT

**Simplex models** were the earliest machines of this make, being key driven, full-button key keyboard, non-listing machines, equipped with total dials above the keyboard and a separate set of dials (upper set) to indicate the amount of the last item set up on the keyboard.



These models, had in addition to the clear-out crank which cleared both dials simultaneously, a bar at the bottom of the keyboard to clear the register dials only. These models were designed for the operation of one column at a time; the simultaneous operation of two columns where a carry was involved, resulted in loss of the carry. There were two different types of the Simplex model, one with five keys in each column, the other with nine keys in each column.

**Duplex models** provide for the operation of any number of columns at one time, having the capacity to add, receive and carry simultaneously in all columns. This type has but one set of total dials and is also made with five keys in each column and with nine keys in each column. (See complete description in Catalog Section).

### Valuations

| | Valuations |
|---|---|
| Simplex Models with five keys in each column | $ 5.00 |
| Simplex Models with nine keys in each column | 7.50 |
| Duplex Models with five keys in each column | 15.00 |
| Duplex Models with nine keys in each column | 25.00 |

## BURKHARDT ARITHMOMETER

Sold by Keuffel & Esser Company. General offices and factory, Hoboken, New Jersey.

A flat bed, lever set (slideboard) type of calculating machine, similar to the old style Peerless machine marketed by the same distributor. Made in various capacities. Fitted in a wooden cabinet. Originally sold for $250.00. Valuations are not generally quoted.

## ODHNER

A rotary type of lever set, crank operated machine, similar in appearance and operation to the Brunsviga and other makes of this type. Made in St. Petersburg (Petrograd), Russia; not extensively sold in the United States. Original price for 18 place capacity was $300.00. Valuations not generally quoted.

## MONROE

**(See Catalog Section for Illustrations, Descriptions and List Prices of Current Models)**

All Monroe models earlier than the "K" Model have a flat keyboard bed with key stems of varying lengths. Model K has a sloping keyboard with key stems of uniform height. On all models except Model K, the carriage must be raised when clearing the carriage dials. Model K has only one stopping place for the main operating crank (the upper position), whereas earlier models have two stopping places; the upper position being the stopping place for addition and multiplication and the lower position for subtraction and division. Models earlier than K, had repeat key, and keyboard release key at right, and item counter key at left of keyboard, none of which were indexed as on K model.

### Models and Valuations

**Models and Serial Numbers** appear on back of case, or may be found stamped on main frame under (and by lifting) carriage.

| Model | Commenced | | Serials | Valuation |
|---|---|---|---|---|
| D | 1915 | Below | 4,000... | $ 20.00 |
| E | 1916 | Above | 4,000... | 35.00 |
| F | 1917 | Above | 6,000... | 50.00 |
| G | 1919 | Above | 20,000... | 75.00 |
| K-20 | 1921 | Above | 50,000... | 105.00 |
| K-16 | 1921 | Above | 60,000... | 95.00 |
| K-12 | 1921 | Above | 70,000... | 85.00 |

(Serial numbers are approximate).

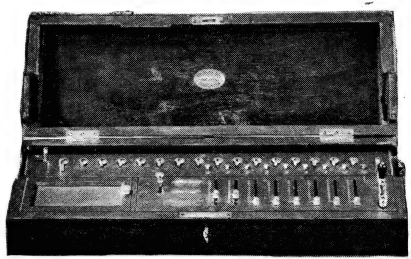



Model G

## PEERLESS RECKONING MACHINE

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models)**

Early models, made in several sizes, were enclosed in a wooden case. The keyboard was on a plane parallel to the desk. Present model is made in one size only, with metal case designed with legs to provide a slant to keyboard. All mechanical principles and the operation and controls are the same on both new and old designs. Illustration on this page shows old model.



Old Model

### Models and Valuations

| | |
|---|---|
| Old model, 16 place capacity | $10.00 |
| Old model, 18 place capacity | 10.00 |
| Old model, 20 place capacity | 10.00 |
| Improved model, 16 place capacity | 20.00 |

## RECORD

**(See Catalog Section for Illustration, Description and List Prices)**

### Models and Valuations

Model numbers do not appear; serial numbers are stamped on the top of left frame casting under the carriage.

| Model | Capacity | Valuation |
|---|---|---|
| No. 1 | 9x8x13 | $50.00 |
| No. 2 | 9x9x16 | 60.00 |
| No. 3 | 9x9x18 | 75.00 |

*Good judgment can be exercised only after consideration of all factors in a case. The DIGEST is designed to give you all factors regarding business machines.*

COMPTOMETERS
BOUGHT SOLD and TRADED

**"CALCULATORS our SPECIALTY"**

***If it is made abroad write us—on purchases or repairs***

All Makes of Adding Machines Handled

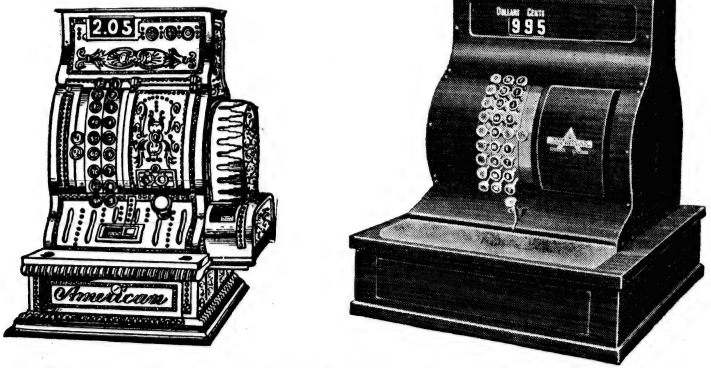
**V. R. SHATTUCK**
Successor to
CONNELL & SHATTUCK
*Adding Machine Exchange*
**427-9 Third Ave. :: :: Pittsburgh, Pa.**

# Cash Registers

## AMERICAN

**(See Catalog Section for Illustration, Description and Prices of Current Models.)**

All models of the present line of American cash registers are furnished in enameled cabinets, in mahogany, golden oak or walnut. (See descriptions in catalog section.) Older models have brass or aluminum cabinets.




**Old Style Machines Have Brass Cabinets. Present Models Have Smooth Enameled Cabinets**

### Model Numbers

The method of numbering American registers has been changed several times. The first machines had style numbers of two figures; later machines and the present line are numbered in three or four figures.

Model and serial numbers appear either on the outside face of the cabinet, or under the cover lid, near the total window. A verifying label is also usually pasted to underside of drawer. Care should be taken not to confuse the model with the serial number.

Model numbers shown below in two figures are the same basic machines as models numbered in three figures. The third figure denotes extra attachments or equipment.

For example, a Model 46 American Register—

If it appears 460, the 0 at the end of a model number of three figures means the register has no attachments.

If it appears 461, the 1 at the end of a model number of three figures means the register has a detail strip.

## AMERICAN—continued

If it appears 462, the 2 at the end of a model number of three figures means the register has autogram attachment.

If it appears 464, the 4 at the end of a model number of three figures means the register has check and detail strip.

If it appears 465, the 5 at the end of a model number of three figures means the register has check and autogram.

On brass cabinet registers having four figures in the model number, the first figure denotes the number of total adding counters. (4905, etc.)

On enameled cabinet registers, the number of total adding counters is denoted by a dash and a figure after the model number. 662-(4) means a model 662 with four total adding counters.

## Models and Valuations

**(All Models Listed Below Are Total Adders)**

* Indicates Present Line.

Note: Valuations shown below are those made by such dealers who handle used machines of this make. Not all dealers will quote on them. No extra valuations are made for attachments or extra equipment.

| Model | Cabinet | Description | Valuation |
|---|---|---|---|
| 10 | Brass | 1c to 99c, narrow cash drawer | $ 7.50 |
| 11 | Brass | 5c to 95c, narrow cash drawer | 7.50 |
| 12 | Brass | 1c to $1.99, narrow cash drawer | $10.00 |
| 13 | Brass | 5c to $1.95, narrow cash drawer | 10.00 |
| 14 | Brass | 1c to $3.99, narrow cash drawer | 10.00 |
| 15 | Brass | 5c to $3.95, narrow cash drawer | 10.00 |
| 33 | Brass | 1c to $5.99, regular cash drawer | 20.00 |
| 34 | Brass | 1c to $9.99, regular cash drawer | 22.50 |
| 35 | Brass | 5c to $9.95, regular cash drawer | 10.00 |
| 36 | Brass | 1c to $9.99, regular cash drawer | 22.50 |
| 37 | Brass | 5c to $9.95, regular cash drawer | 10.00 |
| 38 | Brass | 1c to $59.99, regular cash drawer | 30.00 |
| 44 | Brass | 1c to $9.99, 5 clerks, 5 special keys | 30.00 |
| 45 | Brass | 5c to $9.95, 5 clerks, 5 special keys | 10.00 |
| 46 | Brass | 1c to $99.99, 9 clerks, 5 special keys | 35.00 |
| 47 | Brass | 5c to $9.95, 9 clerks, 5 special keys | 10.00 |
| 48 | Brass | 5c to $9.95, 9 special keys, Bar register | 10.00 |
| 50 | Brass | 1c to $9.99, 5 special keys | 30.00 |
| 51 | Brass | 5c to $9.95, 5 special keys | 10.00 |
| 52 | Brass | 1c to $99.99, 5 special keys | 35.00 |
| 53 | Brass | 5c to $99.95, 5 special keys | 15.00 |
| 56 | Brass | 1c to $9.99, 8 clerks, 33 special keys | 25.00 |
| 90 | Brass | 1c to $999.99, 9 clerks, 5 special keys | 50.00 |
| 91 | Brass | 5c to $999.95, 9 clerks, 5 special keys | 25.00 |
| *140 | Enamel | Same key arrangement as No. 34 | 30.00 |
| *280 | Enamel | Same key arrangement as No. 38 | 40.00 |
| *300 | Enamel | Same key arrangement as No. 50 | 50.00 |
| *420 | Enamel | Same key arrangement as No. 52 | 60.00 |
| *540 | Enamel | Same key arrangement as No. 44 | 60.00 |
| *660 | Enamel | Same key arrangement as No. 46 | 65.00 |
| *700 | Enamel | Same key arrangement as No. 90 | 70.00 |

## FEDERAL

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models.)**

Production has not been established in sufficient quantity to determine any used valuations. In the absence of specific valuations, the list prices in the Catalog Section may be used as a guide.

## HALLWOOD

Press-in key set, button operated, barrel type indication, similar to American old style and National 1000 Class. Made by the Hallwood Cash Register Company, later absorbed by American Cash Register Company, Saginaw, Michigan, who have combined the practical features of the Hallwood in their present line of registers.

### Models and Valuations

Any penny key model, with aluminum cabinet.....$15.00
Any penny key model, with iron cabinet..... 10.00
Any penny key model, with brass cabinet..... 15.00
Add for "Leader" model..... 5.00
No valuation for registers of this make with 5c key arrangement.

## MICHIGAN

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models.)**

Used valuations are not generally quoted. Some dealers will pay $5.00 to $10.00 for registers in good condition.

## NATIONAL

### Location of Model and Serial Numbers

The model and serial numbers will be found on the metal plate on the front (or face) of the cabinet, or are molded or stamped on the cabinet. When the number plate has been removed or in cases where the model or serial numbers are not distinct, a serial number can usually be verified from a label pasted on the bottom of the cash drawer at the time the register leaves the factory. "Model" is sometimes referred to as "size": They mean the same thing.

All National cash registers are marked on the interior mechanism with a serial number corresponding with the serial number originally assigned it at the factory. Following are the locations of such numbers:

**Detail adders:** Back of base casting under back end of keys; or on wheel case casting on the left side of the register.
**79-Principle:** On the back edge of the right side frame, near the indication.
**135-Principle:** On the back edge of right side frame near the base, above the cash drawer.
**300 and 700 Class:** On the left side frame, on the curve just below hole for screw that fastens counter cover.
**400, 500 and 800 Classes:** On the right hand back corner of base casting.
**900 Class:** Same as 500 Class, or on the side frame as on the 79-principle.

## NATIONAL—continued

### Dates of Shipment of National Cash Registers

**(Serial Numbers Are Approximate)**

| Year | Serials | Year | Serials | Year | Serials |
|---|---|---|---|---|---|
| 1889 | up to 10,000 | 1900 | 190,000 to 230,000 | 1912 | 1,670,000 to 1,210,000 |
| 1889 | 10,000 to 16,250 | 1901 | 230,000 to 265,000 | 1913 | 1,210,000 to 1,365,000 |
| 1890 | 16,250 to 21,250 | 1902 | 265,000 to 308,000 | 1914 | 1,365,000 to 1,465,000 |
| 1891 | 21,250 to 36,000 | 1903 | 308,000 to 365,000 | 1915 | 1,465,000 to 1,545,000 |
| 1892 | 36,000 to 52,500 | 1904 | 365,000 to 420,000 | 1916 | 1,545,000 to 1,620,000 |
| 1893 | 52,500 to 67,000 | 1905 | 420,000 to 480,000 | 1917 | 1,620,000 to 1,675,000 |
| 1894 | 67,000 to 81,250 | 1906 | 480,000 to 545,000 | 1918 | 1,675,000 to 1,715,000 |
| 1895 | 81,250 to 95,000 | 1907 | 545,000 to 605,000 | 1919 | 1,715,000 to 1,780,000 |
| 1896 | 95,000 to 111,000 | 1908 | 605,000 to 690,000 | 1920 | 1,780,000 to 1,865,000 |
| 1897 | 111,000 to 132,000 | 1909 | 690,000 to 790,000 | 1921 | 1,865,000 to 1,940,000 |
| 1898 | 132,000 to 140,000 | 1910 | 790,000 to 930,000 | 1922 | 1,940,000 to 2,050,000 |
| 1899 | 140,000 to 190,000 | 1911 | 930,000 to 1,070,000 | | Present serials are at approximately 2,250,000 |

### Dates of Shipment of Factory Rebuilt or Second Hand National Cash Registers

An "S" before the serial number on National models indicates that the Register had been taken in by the National Cash Register Company and rebuilt and again sold by them. The serial number on these Registers is the REBUILT SERIAL NUMBER, and the year in which it was rebuilt may be determined by the following schedule of serial numbers:

**(Serial Numbers Are Approximate)**

| Year | Serials | Year | Serials | Year | Serials |
|---|---|---|---|---|---|
| 1893 | S 1 to S 1,000 | 1903 | S19,000 to S23,000 | 1913 | S 81,000 to S 83,000 |
| 1894 | S 1,000 to S 3,000 | 1904 | S23,000 to S27,000 | 1914 | S 83,000 to S 87,000 |
| 1895 | S 3,000 to S 4,000 | 1905 | S27,000 to S33,000 | 1915 | S 87,000 to S 96,000 |
| 1896 | S 4,000 to S 5,000 | 1906 | S33,000 to S41,000 | 1916 | S 96,000 to S108,000 |
| 1897 | S 5,000 to S 6,000 | 1907 | S41,000 to S53,000 | 1917 | S108,000 to S120,000 |
| 1898 | S 6,000 to S 7,000 | 1908 | S53,000 to S61,000 | 1918 | S120,000 to S126,000 |
| 1899 | S 7,000 to S 9,000 | 1909 | S61,000 to S71,000 | 1919 | S126,000 to S137,000 |
| 1900 | S 9,000 to S13,000 | 1910 | S71,000 to S75,000 | 1920 | S137,000 to S146,000 |
| 1901 | S13,000 to S15,000 | 1911 | S75,000 to S77,000 | 1921 | S146,000 to S159,000 |
| 1902 | S15,000 to S19,000 | 1912 | S77,000 to S81,000 | 1922 | S159,000 to S170,000 |

### Code Letters on National Rebuilt Registers to Indicate Original Serial Number

For some years the practice has been to put a code letter after the rebuilt number of a register for the purpose of indicating the original serial number. In the case of registers that have been rebuilt and which are given different valuations in these lists according to their original serial numbers the second hand number (the "S" number) should not apply. If a code letter follows the second hand serial number, it should always be used to determine the approximate original serial number to determine the correct valuation, (i. e. the valuation that would apply to a register of that approximate original number.)

**(Serial Numbers Are Approximate)**

| Letter | Original Serials | Letter | Original Serials |
|---|---|---|---|
| A, B or C | Below 500,000 | L, M | 1,200,000 to 1,400,000 |
| D | 500,000 to 620,000 | N, P | 1,400,000 to 1,670,000 |
| E, F or G | 620,000 to 900,000 | R, S or T | over 1,670,000 |
| H, J or K | 900,000 to 1,200,000 | W | Is not a code letter |

## NATIONAL—continued

## Valuations of Special Features on National Cash Registers

An extra valuation is usually made for the features and attachments listed below. The letters and numbers designating the feature, always follow the basic model number. (For example: Model No. 736-G would indicate a G or Autogram device on a regular model 736). See catalog section for detailed explanation of abbreviations and feature markings.

Where a valuation is shown in these lists for any model with a feature included, the valuation given includes the extra valuation of the feature. Wherever the feature is not included, the following valuations should be added to the basic valuations for the regular model register.

| Designation | Description | Extra Valuation |
|---|---|---|
| **G** | Autogram device for writing on wide detail strip | $5.00 |
| **E** | Electrically (motor) operated: | |
| | On 1c key registers older than 800 class | 20.00 |
| | On 1c key registers of 800 class and later | 25.00 |
| | On 5c key registers older than 800 class | 15.00 |
| | On 5c key registers of 800 class and later | 20.00 |
| **L** | Electric illumination of indication | None |
| **T** | Sliding table. (on 900 class) | None |
| **R & S** | Receipt and slip printer | None |
| **C D** | Check device (on press-down key registers) | 10.00 |
| **N** | Narrow capacity, (one bank of keys less than a regular register of the same model number). When valuation is not specifically shown, deduct from the valuation shown for the regular model | 15% |
| **D B** | Double bank key arrangement. Always a 5-cent key register. Valuation is 20% less than a regular 5-cent key register of the same model number | Deduct |
| **S T** | Secret total counter. No extra valuation. | |
| **-2** | After the model number indicates two total adding counters. | |
| | On registers having a valuation of $80.00 and under | 7.00 |
| | On registers having a valuation over $80.00 | 10.00 |
| **-2-2** | After the model number denotes register has two counters and two cash drawers. No extra valuation. | |
| **-F** | Denotes floor cash drawer cabinet. Usually a number denoting the number of cash drawers appears directly before this letter. (Such as—4F meaning a floor cabinet with 4 cash drawers). Extra valuation when register has more than 4 drawers: on 500 and 900 models | 20.00 |
| | on other models | 15.00 |
| **-C** | Denotes a cash drawer cabinet for use on a counter. Usually a number denoting the number of cash drawers appears directly before this letter. (Such as 4C, meaning a counter cabinet with 4 cash drawers). Extra valuation when register has more than 4 drawers: on 500 and 900 models | 25.00 |
| | other models | 10.00 |
| **(2)** | Denotes that the printer makes a single impression on an inserted sales slip | 10.00 |
| **(3)** | Denotes that the printer makes a double impression on an inserted sales slip | 10.00 |
| **(5)** | Denotes a number printer, which makes a double impression on an inserted sales slip | 15.00 |

## NATIONAL—continued

### Explanation of Abbreviations

| | |
|---|---|
| T | Ticket key |
| NS | No-sale key |
| VK | Void key |
| RA | Received-on-account key } Color system keys |
| PO | Paid-out key } Color system keys |
| Ch | Charge key } Color system keys |
| DSP | Detail strip printer |
| WDSP | Wide detail strip printer |
| CRP | Customer's receipt printer |
| ISP | Inserted sales slip printer |
| CIRP | Customer's itemized receipt printer |
| CD | Check device |
| R&S | Receipt and slip printer |
| NP | Number printer |
| X | Class of 900 construction. |
| N | Narrow (one bank less than regular) keyboard. |
| (2) | Single impression slip printer |
| (3) | Double impression slip printer |
| (5) | Double impression slip printer in combination with NP |
| (336) | Or similar number in parenthesis denotes superseding model |

### National 33-Principle and Early Detail-Adders

**Detail-Adders:** (Designated by the abbreviation D.A.) See description in catalog section.

**33-Principle** are the earliest type of National total adding registers. They had a simple total adding counter different from that employed in later machines. Operated from press-down keys.

Note: In column headed "Cabinet," B indicates brass cabinet; I, iron cabinet; W, wood cabinet.

| Model | Cabinet | Keys | Description | Between serials | Valuation |
|---|---|---|---|---|---|
| 0 | B | 11 | D.A. | 50,000-155,000 | $ 7.50 |
| 1 | B | 11 | D.A. | 155,000 | 7.50 |
| 1½ | B | 20 | D.A. | 50,000-155,000 | 7.50 |
| 2 | B | 25 | D.A. | 155,000 | 10.00 |
| 3 | B | 30 | D.A. | 155,000 | 10.00 |
| 4 | B | 40 | D.A. | 15,000-155,000 | 10.00 |
| 5 | W | 25 | D.A. | 50,000-110,000 | 5.00 |
| | B | 11 | D.A., 5c to $1.95 and N.S., or 1c keys (215-216) | 110,000-330,000 | 10.00 |
| 5½ | B | 11 | D.A., same as 5 | 260,000-340,000 | 10.00 |
| 6 | B | 11 | D.A., same as 5, extended wood base | 110,000-335,000 | 10.00 |
| 6 | W | 30 | D.A. | 55,000-110,000 | 5.00 |
| 6½ | B | 11 | D.A., extended base | 260,000-345,000 | 10.00 |
| 7 | B | 20 | D.A., 1c to $1.99 and N.S. or 5c to $1.95 and N.S. (225-226) | 110,000-618,000 | 12.50 |
| 8 | B | 11 | T.A. | 25,000- 50,000 | 12.50 |
| | B | 25 | D.A. (235) | 110,000-615,000 | 10.00 |
| 9 | B | 25 | T.A., 33 principle | 15,000- 55,000 | 12.50 |
| | B | 30 | D.A., detail adder, 5c to $1.95 (245-246) | 110,000-618,000 | 10.00 |
| 10 | B | 36 | T.A., 79 principle, 1c to $99.99, without printer | 25,000- 50,000 | None |
| | B | 36 | T.A., 79 principle, 1c to $99.99, check printer | 37,000- 40,000 | 10.00 |

## NATIONAL—continued

| Model | Cabinet | Keys | Description | Between serials | Valuation |
|---|---|---|---|---|---|
| 10 | B | 40 | D.A. | 110,000-260,000 | 15.00 |
| 11 | B | 36 | 79 principle, 1c to $99.99—check printer | 40,000- 52,000 | None |
| | I | 11 | D.A., 1c or 5c (215-216) | 110,000-405,000 | 15.00 |
| 12 | B | 25 | T.A., 5c to $19.95 | 15,000- 16,000 | 12.50 |
| | B | 15-19 | 79 principle | 40,000- 52,000 | 10.00 |
| | B | 11 | D.A., 1c or 5c keys | 363,000-618,000 | 10.00 |
| 13 | I | 25 | D.A., 1c or 5c keys | 15,000- 18,000 | 7.50 |
| | B | 28 | 79 principle | 18,000- 25,000 | None |
| | I | 20 | D.A. | 110,000-620,000 | 10.00 |
| 14 | B | 25 | T.A., 33 principle | 18,000- 25,000 | 12.50 |
| | I | 36 | 79 principle | 40,000- 52,000 | None |
| | I | 25 | D.A. | 11,000-615,000 | 10.00 |
| 15 | B | 30 | T.A. | 18,000- 25,000 | 10.00 |
| | I | 20 | 79 principle | 40,000- 52,000 | None |
| | I | 30 | D.A. | 110,000-615,000 | 10.00 |
| 16 | I | 20 | 79 principle | 40,000- 52,000 | None |
| | I | 40 | D.A. | 110,000-120,000 | 10.00 |
| 17 | B | 30 | D.A. | 25,000- 26,000 | 10.00 |
| | I | 36 | 79 principle | 42,000- 52,000 | None |
| 18 | I | 36 | 79 principle | 25,000- 40,000 | None |
| | W | 25 | D.A. | 118,000-615,000 | 5.00 |
| 19 | B | 20 | T.A., 33 principle | 25,000- 40,000 | 10.00 |
| | B | 21 | T.A., 33 principle | 45,000- 52,000 | 10.00 |
| | W | 25 | D.A. | 118,000-341,000 | 5.00 |
| 20 | B | 27 | 79 principle | 35,000- 40,000 | None |
| | B | 25 | T.A. | 49,000- 52,000 | 12.50 |
| | I | 25 | D.A. (225) | 155,000-250,000 | 12.50 |
| 21 | I | 19 | 79 principle | 35,000- 40,000 | None |
| | B | 31 | T.A., 35 principle | 49,000- 52,000 | 10.00 |
| | W | 11 | D.A. | | 5.00 |
| | I | 30 | D.A. | 155,000-250,000 | 7.50 |
| 22 | B | 21 | T.A., 33 principle | 28,000- 40,000 | 10.00 |
| | B | 29 | D.A. | 49,000- 52,000 | 10.00 |
| | I | 30 | D.A. | 155,000-252,000 | 7.50 |
| 23 | B | 11 | T.A., 33 principle | 30,000- 35,000 | 10.00 |
| | I | 20 | 79 principle | 38,000- 41,000 | None |
| | I | 24 | D.A. | | 7.50 |
| | B | 39 | D.A., combined with 33 principle T.A. | 49,000- 51,000 | 15.00 |
| | W | 24 | D.A. | | 5.00 |
| 24 | B | 25 | T.A., 33 principle | 49,000- 51,000 | 10.00 |
| 25 | W | 25 | T.A., 33 principle | 39,000- 41,000 | 7.50 |
| 27 | B | 36 | 79 principle | 49,000- 51,000 | None |
| 28 | W | 25 | D.A., wood cabinet | 49,000- 51,000 | 7.50 |
| 29 | W | 30 | D.A., wood cabinet | 49,000- 51,000 | 7.50 |
| 30 | W | 29 | D.A., wood cabinet (226) | 49,000- 51,000 | 7.50 |
| | B | 11 | T.A., 33 principle | 58,000- 66,000 | 10.00 |
| | B | 12 | T.A., 33 principle | 66,000-273,000 | 10.00 |
| 31 | B | 21 | T.A., 33 principle | 51,000- 72,000 | 10.00 |
| | B | 12 | T.A., 33 principle | 72,000-273,000 | 10.00 |
| 32 | B | 25 | T.A., 33 principle | 51,000- 58,000 | 10.00 |
| | B | 21 | T.A., 33 principle | 72,000-140,000 | 10.00 |
| | B | 12 | T.A., 33 principle, extended base | 220,000-273,000 | 10.00 |
| 33 | B | 25 | T.A., 33 principle | 51,000-310,000 | 12.50 |
| 34 | W | 21 | T.A., 33 principle, wood cabinet | 72,000-140,000 | 7.50 |
| | B | 26 | 35 principle | 64,000- 72,000 | 10.00 |

# Cash Register Deale

This Association was formed in New York City in October, 1918, by the largest and most reputable independent cash register dealers of the United States and Canada.

All of its members felt the necessity of such an Association; therefore its existence.

The main object of the Association is to contract for and purchase the many necessary supplies and parts that are essential to the cash register business.

Ordering in large quantities enables our members to obtain such supplies and parts at a minimum cost, thus permitting them to sell to their customers these articles at greatly reduced prices.

It also establishes for each member a direct connection in every important city in the United States and Canada which guarantees service to any of our customers in any part of the country.

The aggregate capital investment of the members of this Association represents more than $5,000,000.

When purchasing a cash register, supplies or parts be sure it is from a member of the




**Cash Register Dealers Association, Inc.**

**Executive Offices and Warehouse**

**189 Flatbush Avenue**

**Brooklyn, N. Y.**

# ers Association, Inc.

## *Member Dealers*

Acme Cash Register Co.....346 West 42nd St., New York City
Baltimore Cash Register Exchange.....224 N. Gay St., Baltimore, Md.
Blackwell & Laundry Agency.....4 St. Lawrence Blvd., Montreal, Canada
Cash Mercantile Co.....326 Market St., San Francisco, Calif.
Cash Register Exchange.....2024 Main St., Dallas, Texas
Cash Register Exchange.....821 Hennepen Ave., Minneapolis, Minn.
Cash Register Exchange.....408 S. Los Angeles St., Los Angeles, Calif.
Cash Register Trading Co.....936 Southern Blvd., Bronx, N. Y. City
Cadillac Used Cash Register Co.....1451 Gratiot Ave., Detroit, Mich.
Detroit Used Cash Register Co.....1357 Gratiot Ave., Detroit, Mich.
Essex Cash Register Co.....267 Market St., Newark, N. J.
Howe Scale Co.....110 Wood St., Pittsburgh, Pa.
Howe Scale Co.....512 St. Charles St., St. Louis, Mo.
Frank T. Knight.....10 Blackstone St., Boston, Mass.
Leeds Show Case & Fixture Co.....Kansas City, Mo.
M. W. Lucy & Co.....118 W. Fayette St., Baltimore, Md.
Merchants Cash Register Exch., Inc.....189 Flatbush Ave., Brooklyn, N. Y.
New York Cash Register Co.....80 East 116th St., New York City
Ohio Howe Scale Co.....321 Main St., Cincinnati, Ohio
Ohio Cash Register Co.....221 Crane St., Dayton, Ohio
Omaha Fixture & Supply Co .Southwest Cor. 11th & Douglas Sts., Omaha, Nebr.
Rosenberg & Gross.....739 Brook Ave., Bronx, N. Y. City
Russell Sales Co.....Lancaster, Pa.
San Francisco Cash Register Co.....411 Market St., San Francisco, Calif.
St. Louis Cash Register Co.....2211 Lucas Ave., St. Louis, Mo.
Service Cash Register Co.....31 West 14th St., New York City
Southern Cash Register Co.....1016 Pine St., St. Louis, Mo.
Store Specialties & Cash Register Co.....319 West 42nd St., New York City
Skerl Laboratories.....1926 Broadway, New York City
Texas Sales Co.....1907 Elm St., Dallas, Texas
A. J. Thomas.....125 East Lake St., Chicago, Ill.
United Cash Register Co.....1211 Filbert St., Philadelphia, Pa.
Wayne Store Specialty Co.....1557 Gratiot Ave., Detroit, Mich.
Wiles Cash Register Exchange.....72 North St., Rochester, N. Y.

*We invite dealers in every Section of the Country to join. The cost is small—the advantages are great.*

*Write for particulars.*

## NATIONAL—continued

### 35-Principle

Press-down key operated total adders, tied-up or free counters; with or without detail strip printer; superseded by the 300 Class at serial (approximately) No. 615,000. Brass or iron cabinet, relief design, nickel or brass finish.

¼ or ½ following a model number of this principle denotes that the register is equipped with a detail strip printer; ¾ following the model number also denotes that the register is equipped with a detail strip printer, but amounts registered in connection with special transaction keys are not added.

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 34 | 25 | 1c or 5c keys | 51,000- | 64,000 | $12.50 |
| 35 | 31 | 1c to $9.99 | 51,000- | 125,000 | 40.00 |
| | | | 125,000- | 565,000 | 45.00 |
| 35¼; ½ or ¾ | 31 | Same with D.S.P. | 85,000- | 615,000 | 55.00 |
| 36 | 31 | 1c or 5c keys with D.S.P. | 53,000- | 72,000 | 25.00 |
| | 28 | 1c to $9.99 and N.S., iron cabinet | 72,000- | 140,000 | 30.00 |
| | 37 | 5c to $59.95 N.S., and color system | 220,000- | 615,000 | 40.00 |
| 36¼; ½ or ¾ | 37 | Same with D.S.P. | 85,000- | 615,000 | 65.00 |
| 37 | 29 | 1c to $19.99 and N.S. | 72,000- | 140,000 | 40.00 |
| | 27 | 1c to $8.99 and N.S. (342) | 140,000- | 615,000 | 45.00 |
| 37¼; ½ or ¾ | 27 | Same with D.S.P. | 85,000- | 615,000 | 60.00 |
| 38 | 21 | 1c to $3.99 and N.S. (332) | 85,000- | 140,000 | 35.00 |
| | 22 | 1c to $3.99 and N.S. (332) | 140,000- | 615,000 | 40.00 |
| 38¼; ½ or ¾ | 22 | Same with D.S.P. (336) | 85,000- | 615,000 | 55.00 |
| 39 | 27 | 5c to $9.95 and N.S. or 5c to $6.95, N.S. and 3 bar keys | 85,000- | 615,000 | 35.00 |
| 39¼; ½ or ¾ | 27 | Same with D.S.P. (349) | 85,000- | 615,000 | 35.00 |
| 40 | 27 | 5c to $29.95 N.S. and "Ticket" key | 85,000- | 630,000 | 35.00 |
| 40¼; ½ or ¾ | 27 | Same with D.S.P. | 85,000- | 615,000 | 35.00 |
| 41 | 27 | 5c to $39.95 and N.S. | 85,000- | 615,000 | 35.00 |
| 41¼; ½ or ¾ | 27 | Same with D.S.P. | 85,000- | 615,000 | 35.00 |
| 42 | 31 | 1c to $29.99, N.S. and Ch. | 85,000- | 105,000 | 45.00 |
| | 33 | 1c to $29.99, N.S. and color system (352) | 105,000- | 615,000 | 50.00 |
| 42¼; ½ or ¾ | 33 | Same with D.S.P. (356) | 85,000- | 615,000 | 60.00 |
| 43 | 31 | 1c to $19.99, N.S., Ch. and "Ticket" key | 85,000- | 105,000 | 45.00 |
| | 33 | 1c to $39.99, N.S., Ch. and "Ticket" key | 105,000- | 615,000 | 50.00 |
| 43¼; ½ or ¾ | 33 | Same with D.S.P. (358) | 85,000- | 615,000 | 60.00 |
| 43 Sp'l | 33 | 1c to $5.99 and N.S. | 320,000- | 615,000 | 50.00 |
| 44 | 21 | 5c to $1.95 and N.S. (333) | 85,000- | 615,000 | 22.50 |
| 44¼; ½ or ¾ | 21 | Same with D.S.P. (337) | | 615,000 | 27.50 |
| 45 | 31 | 5c to $19.95, N.S. and color system | 96,000- | 615,000 | 30.00 |
| 45¼; ½ or ¾ | 31 | Same with D.S.P. | | 615,000 | 35.00 |
| 46 | 31 | 1c to $39.99 and N.S. | 96,000- | 615,000 | 60.00 |
| 46¼; ½ or ¾ | 31 | Same with D.S.P. | | 615,000 | 67.50 |
| 47 | 27 | 5c to $7.95 and N.S. | 96,000- | 615,000 | 32.50 |
| 47¼; ½ or ¾ | 27 | Same with D.S.P. (347) | | 615,000 | 35.00 |
| 48 | 31 | 5c to $49.95, N.S. and color system | 110,000- | 310,000 | 40.00 |
| 48¼; ½ or ¾ | 31 | Same with D.S.P. | | 310,000 | 55.00 |
| 49 | 37 | 1c to $69.99, N.S. and color system (362) | 110,000- | 615,000 | 60.00 |




# National Cash Registers

## BOUGHT : SOLD : EXCHANGED REPAIRED

*WIRE US*

***For special registers to fill your orders, for parts or supplies, or when you have a machine to sell.***

**Largest Stock in the World**

## CASH REGISTER EXCHANGE

**125 West Lake Street .:. Chicago**

## NATIONAL—continued

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 49¼; ½ or ¾ | 37 | Same with D.S.P. (366) | | 615,000 | 70.00 |
| 50 | 15 | 5c to $1.95 and N.S. (313) | 112,000- | 615,000 | 22.50 |
| 50¼ | 15 | Same with D.S.P. (317) | | 615,000 | 27.50 |
| 51 | 51 | 1c to 59c and N.S. (312) | 112,000- | 615,000 | 25.00 |
| 51¼ | 15 | Same with D.S.P. (316) | | 615,000 | 27.50 |
| 52 | 15 | Same as 50, with extended base | 140,000- | 615,000 | 27.50 |
| 52¼ | 15 | Same as 50¼, with extended base | | 615,000 | 30.00 |
| 53 | 15 | Same as 51 with extended base | 140,000- | 230,000 | 27.50 |
| 53¼ | 15 | Same as 51¼ with extended base | - | 230,000 | 30.00 |
| 54 | 37 | 1c to $19.99, N.S. and color system | 142,000- | 615,000 | 62.50 |
| 54¼; ½ or ¾ | 37 | Same with D.S.P. (368) | | 615,000 | 70.00 |
| 55 | 24 | 1c to $5.99 and N.S., iron cabinet | 154,000- | 174,000 | 25.00 |
| | 22 | 5c to $2.95 and N.S., or 1c to $3.99, iron cabinet | 174,000- | 192,000 | 20.00 |
| 55X | 22 | 5c to $2.95 and N.S., or 1c to $3.99, push button, iron cabinet | 190,000- | 230,000 | 15.00 |
| 55 | 24 | 1c to $5.99 and N.S., iron cabinet | 192,000- | 230,000 | 25.00 |
| 56 | 24 | 1c to $5.99 and N.S., iron cabinet | 154,000- | 230,000 | 25.00 |
| 57 | 27 | 5c to $9.95 and N.S. | 154,000- | 230,000 | 35.00 |
| 57X | 27 | 5c to $9.95 and N.S., or 1c to $8.99 and N.S., push button, iron cabinet | 190,000- | 230,000 | 20.00 |
| 58 | 29 | 1c to $19.99 and N.S. | 154,000- | 178,000 | 37.50 |
| | 31 | 1c to $9.99, N.S. and 4 special keys, push button | 178,000- | 230,000 | 37.50 |
| | 31 | 1c or 5c, with or without special keys | 175,000- | 248,000 | 37.50 |
| 58X | 31 | 5c to $19.95, or 1c to $39.99, and N.S., R.A., Ch., and P.O. iron cabinet | 190,000- | 220,000 | 27.50 |
| 58½ | 31 | Same as 58, iron cabinet with D.S.P. | 230,000- | 310,000 | 55.00 |
| 59 | 31 | 1c to $9.99, N.S. and color system, iron cabinet | 154,000- | 310,000 | 45.00 |
| 60 | 27 | 5c to $7.95 and N.S., iron cabinet | 154,000- | 310,000 | 25.00 |
| 61 | 19 | 79 principle, iron cabinet | 41,000- | 51,000 | None |
| | 31 | 1c to $5.99 and N.S. | 154,000- | 615,000 | 50.00 |
| 61¼; ½ or ¾ | 31 | Same with D.S.P. | 154,000- | 615,000 | 65.00 |
| 62 | 19 | 79 principle, iron cabinet | 41,000- | 51,000 | None |
| | 20 | Combination total and detail adder, iron cabinet | 51,000- | 128,000 | 15.00 |
| | 31 | 1c to $8.99, N.S. and "Ticket" key | 154,000- | 615,000 | 52.50 |
| 62¼; ½ or ¾ | 31 | Same with D.S.P. | 154,000- | 615,000 | 65.00 |
| 63 | 27-28 | 79 principle, iron cabinet | 41,000- | 51,000 | None |
| | 29 | Combination total and detail adder | 51,000- | 140,000 | 15.00 |
| | 21-22 | 5c to $2.95 and N.S., iron cabinet | 158,000- | 335,000 | 15.00 |

## *We want to buy—*

Second hand National Cash Registers, equipped for registering in any currency; also parts, etc.

We solicit agency propositions from manufacturers of every kind of meritorious new machines and devices.

**Brooks**

CASH REGISTER SPECIALISTS

23 Elgin Street, Hawthorn, Melbourne, Australia

## NATIONAL CASH REGISTERS

**SCALES, COFFEE MILLS, MEAT CHOPPERS and SLICING MACHINES**

***We Sell for Less Than Any Other Concern***

All Merchandise Sold is Guaranteed by Bond furnished by the National Surety Company, the largest Bonding Company in the world.

**Acme Cash Register Company**

***Established 1890***

**346 W. 42nd Street Near 9th Avenue**

**New York City**

## Cash Registers — Used Machine Valuations

### NATIONAL—continued

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 64 | 20 | 79 principle, iron cabinet..... | 41,000- | 51,000 | None |
| | 39 | Combination total and detail adder ..... | 41,000- | 51,000 | None |
| | 25 | 5c to $5.95 and N.S., iron cabinet ..... | 158,000- | 335,000 | 27.50 |
| 65 | 36 | 1c to $99.99, 79 principle, iron cabinet ..... | 41,000- | 51,000 | None |
| | 27 | 1c to $5.99 and N.S..... | 41,000- | 615,000 | 50.00 |
| 65¼; ½ or ¾ | 27 | Same with D.S.P. (348)..... | | 615,000 | 60.00 |
| 66 | 21 | 5c to $1.95 and N.S., wood cabinet ..... | 41,000- | 51,000 | None |
| | 37 | 1c to $59.99 N.S. and color system ..... | 200,000- | 220,000 | 60.00 |
| 67 | 25 | 5c to $5.95 and N.S., 33 principle, wood cabinet..... | 41,000- | 51,000 | None |
| | 25-27 | 5c to $5.95 and N.S. or 1c to $8.99 and N.S., iron cabinet.... | 293,000- | 343,000 | 32.50 |
| 67¼ | 25-27 | Same with D.S.P..... | 343,000- | 470,000 | 35.00 |
| 68 | 25 | 5c to $5.95 and N.S..... | 41,000- | 51,000 | None |
| 70 | 19 | 5c to $9.95 and N.S., iron cabinet ..... | 51,000- | 79,000 | 32.50 |
| | 18 | 1c to 99c and N.S..... | 154,000- | 253,000 | 22.50 |

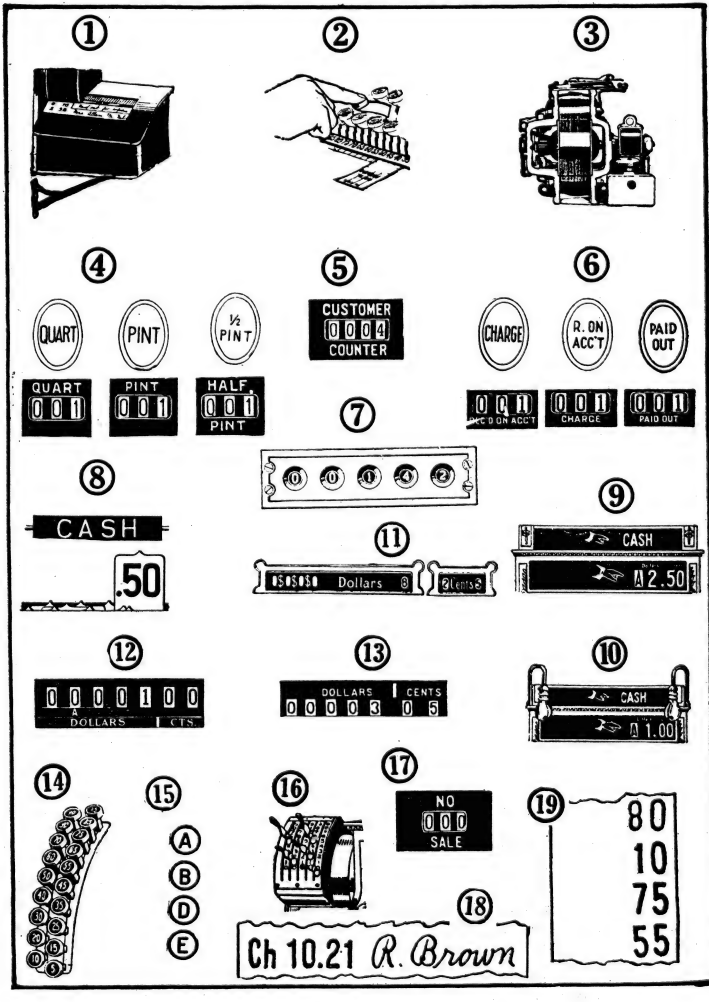
### 79-Principle

Push-in key set, crank operated, total adders; tied-up or free counters; equipped with various styles of printers; also without printers; superseded by the 400 Class at serial (approximately) No. 615,000. Brass or iron cabinets, relief design, nickel or brass finish.

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 71 | 20 | 5c to $9.95, iron cabinet..... | 48,000- | 79,000 | $20.00 |
| | 27 | 1c to $9.99, free counter..... | 154,000- | 570,000 | 35.00 |
| 72 | 11 | Detail adder ..... | 49,000- | 51,000 | 5.00 |
| | 28 | 1c to $19.99, iron cabinet..... | 51,000- | 79,000 | 20.00 |
| | 36 | 1c to $99.99, free counter..... | 154,000- | 570,000 | 35.00 |
| 73 | 36 | 1c to $99.99, free counter, iron cabinet ..... | 51,000- | 79,000 | 20.00 |

### Key to Illustrations on Opposite Page

1—Autogram (G device) on press-down key registers.
2—Check device (CD) on press-down key registers.
3—Detail of motor.
4—Bar arrangement keys and counters.
5—Customer counter; provides total of number of transactions registered during day.
6—Special transaction keys and counters, (color system).
7—Lid counter; tells number of times lid is raised.
8—Indication of sale on press-down key registers.
9—Indication of sale on push-in key registers, showing top indication.
10—Old style illuminated indication (L).
11—Total counter on push-in key registers.
12—Reel total-counter on 900 class registers.
13—Total counter on press-down key registers.
14—Double bank key arrangement.
15—Clerks' initial keys.
16—Number printer for imprinting stock numbers, words, etc., on detail strip or receipt on push-in key registers, ("L" device).
17—No-sale counter, records number of No-Sale transactions registered.
18—Detail strip showing memo made by Autogram device.
19—Regular detail strip on press-down key registers.




**Features on National Cash Registers**

## NATIONAL—continued

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 73 | 36 | 1c to $99.99, free counter, wood cabinet | 154,000- | 253,000 | 10.00 |
| | 27-36 | 1c to $9.99 or $99.99, D.S.P., free counter | 273,000- | 560,000 | 35.00 |
| 74 | 36 | 1c to $9.99, Ch. P.O., R.A. and 6 initial keys, or 1c to $99.99; D.S.P., free counter, iron cabinet | 51,000- | 560,000 | 52.50 |
| 75 | 27 | Same as 74 without D.S.P. | 51,000- | 79,000 | 30.00 |
| | 19 | 5c to $99.95 and N.S., C.R.P. | 119,000- | 140,000 | 35.00 |
| | 45 | 1c to $99.99, 6 initial and 3 special keys; D.S.P. only | 273,000- | 560,000 | 60.00 |
| 76 | 27-28 | 1c to $9.99 or $19.99 | 51,000- | 154,000 | 30.00 |
| 77 | 36 | 1c to $99.99 | 51,000- | 343,000 | 35.00 |
| 78 | 36 | 1c to $99.99, D.S.P. (441) | 51,000- | 615,000 | 50.00 |
| 79 | 36 | 1c to $9.99, R.A., Ch., P.O., 6 initial keys and N.S.; D.S.P. and C.R.P. (442), free counter | 51,000- | 225,000 | 45.00 |
| | | | 225,000- | 615,000 | 65.00 |
| | | Tied up counters | 51,000- | 615,000 | 30.00 |
| | | 5c to $9.95, R.A., Ch., P.O., 6 initial keys, and N.S.; D.S.P. and C.R.P., free counters | 51,000- | 615,000 | 30.00 |
| | | Tied up counters | 51,000- | 615,000 | 20.00 |
| 80 | 25 | 5c to $19.95 and 5 special keys; D.S.P. and C.R.P. | 72,000- | 615,000 | 30.00 |
| 80½ | 35 | 5c to $9.95, 4 initial and 9 special keys; D.S.P. and C.R.P. | 460,000- | 615,000 | 35.00 |
| 81 | 36 | 1c to $9.93, 6 initial keys and color system; I.S.P. (443) | 86,000- | 615,000 | 35.00 |
| 82 | 36 | Same as 79, C.S.R.P. (444) | 103,000- | 615,000 | 55.00 |
| 83 | 36 | Same as 79 (442) | 103,000- | 225,000 | 45.00 |
| | | | 225,000- | 615,000 | 65.00 |
| 83-L | 36 | Same as 83 but with N.P. (L device) (445) | 103,000- | 615,000 | 60.00 |
| 84 | 25 | 1c to $19.99, 5 special keys; D.S.P. and C.R.P. | 103,000- | 615,000 | 50.00 |
| 84½ | 35 | 5c to $9.95, 4 initial, 9 special keys, D.S.P. and C.R.P. | 460,000- | 615,000 | 45.00 |
| 85 | 25 | 5c to $9.95 or $19.95, 3 initial, 3 special keys; C.S.R.P. (no D.S.P.) | 103,000- | 615,000 | 30.00 |
| 86 | 45 | 1c to $99.99, 9 special keys; D.S.P. or C.R.P. | 110,000- | 118,000 | 20.00 |
| 87 | 45 | 1c to $99.99, 9 special keys; D.S.P. and C.R.P. | 110,000- | 118,000 | 20.00 |
| 88 | 45 | 1c to $99.99, 9 special keys; I.S.P. and D.S.P. | 110,000- | 118,000 | 20.00 |
| 89 | 45 | 1c to $99.99, 9 special keys; C.S.R.P. | 110,000- | 118,000 | 20.00 |
| 91 | 45 | 1c to $99.99, 6 initials, Ch., PO., RA.; D.S.P. or C.R.P. (451) | 118,000- | 615,000 | 70.00 |
| 92 | 45 | 1c to $99.99, 6 initials, Ch., PO., RA.; D.S.P. and C.R.P. | 118,000- | 225,000 | 60.00 |
| | | | 225,000- | 615,000 | 85.00 |
| 93 | 45 | 1c to $99.99, 6 initials, Ch., PO., RA.; D.S.P. and I.S.P. (453) | 118,000- | 615,000 | 60.00 |
| 94 | 45 | 1c to $99.99, 6 initials, Ch., PO., RA.; C.S.R.P. (454) | 118,000- | 615,000 | 75.00 |
| 95 | 45 | 1c to $99.99, 6 initials, Ch., PO., RA.; D.S.P. and C.R.P. (452) | 118,000- | 225,000 | 70.00 |

## NATIONAL—continued

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| | | | 225,000- | 615,000 | 95.00 |
| 95-L | 45 | Same as 95 but with N.P. (L device) (445) | 118,000- | 615,000 | 90.00 |
| 96 | 54 | 1c to $699.99, 9 initials, Ch., PO., RA.; D.S.P. or C.R.P. | 118,000- | 225,000 | 70.00 |
| | | | 225,000- | 615,000 | 80.00 |
| 97 | 54 | 1c to $699.99, 9 initials, Ch., PO., RA.; D.S.P. and C.R.P. (printing front only) | 118,000- | 225,000 | 70.00 |
| | | | 225,000- | 615,000 | 90.00 |
| 97-2 | 54 | Same as 97 but with 2 counters and 2 sets of indicators | 118,000- | 615,000 | 50.00 |
| 98 | 54 | 1c to $699.99, 9 initials, Ch., PO., RA.; C.S.R.P. | 118,000- | 615,000 | 75.00 |
| 99 | 54 | Same as 97 but C.R.P. prints back and front (462) | 118,000- | 225,000 | 70.00 |
| | | | 225,000- | 615,000 | 95.00 |
| 99-L | 54 | Same as 99 but with N.P. (L device) (465) | 118,000- | 615,000 | 90.00 |

### Reel Construction, 100-Principle

Push-in key set, crank operated, total adders. Reel construction providing individual totalizing counters mounted in a reel in addition to main counter. Equipped with various styles of printers; also without printers. Superseded by the 500 Class at serial (approximately) No. 615,000. Registers of this class are equipped with 36 to 45 keys and a control lever for reel counters. Brass cabinets, relief design, brass or nickel finish.

| Model | Description | Serials between | | Valuation |
|---|---|---|---|---|
| 100-2 | Two reel-counters, without printer... | 220,000- | 410,000 | 30.00 |
| 102 | Two reel-counters, without printer... | 410,000- | 615,000 | 65.00 |
| 100-2 | Two reel-counters, with D.S.P. or C.R.P. or both | 220,000- | 410,000 | 40.00 |
| 102 | Two reel-counters, with D.S.P. or C.R.P. or both | 410,000- | 615,000 | 75.00 |
| 100-3 | Three reel-counters, without printer.. | 220,000- | 410,000 | 30.00 |
| 103 | Three reel-counters, without printer.. | 410,000- | 615,000 | 65.00 |
| 103-3 | Three reel-counters, with D.S.P. or C.R.P. or both | 220,000- | 410,000 | 40.00 |
| 103 | Three reel-counters, with D.S.P. or C.R.P. or both | 410,000- | 615,000 | 75.00 |
| 100-4 | Four reel-counters, without printer... | 220,000- | 410,000 | 30.00 |
| 104 | Four reel-counters, without printer... | 410,000- | 615,000 | 65.00 |
| 100-4 | Four reel-counters, with D.S.P. or C.R.P. or both | 220,000- | 410,000 | 40.00 |
| 104 | Four reel-counters, with D.S.P. or C.R.P. or both | 410,000- | 615,000 | 80.00 |
| 100-5 | Five reel-counters, without printer.... | 220,000-1,450,000 | | 35.00 |
| 105 | Five reel-counters, without printer... | 410,000- | 615,000 | 70.00 |
| 100-5 | Five reel-counters, with D.S.P. or C.R.P. or both | 220,000-1,450,000 | | 45.00 |
| 105 | Five reel-counters, with D.S.P. or C.R.P. or both | 410,000- | 615,000 | 85.00 |
| 100-6 | Six reel-counters, without printer..... | 220,000- | 410,000 | 35.00 |
| 106 | Six reel-counters, without printer..... | 410,000- | 615,000 | 75.00 |
| 100-6 | Six reel-counters, with D.S.P. or C.R.P. or both | 220,000- | 410,000 | 50.00 |
| 106 | Six reel-counters, with D.S.P. or C.R.P. or both | 410,000- | 615,000 | 90.00 |

## NATIONAL—continued

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 107 | | Seven reel-counters, without printer.. | 530,000- | 615,000 | 75.00 |
| | | Seven reel-counters, with D.S.P. or C.R.P. or both ..... | 530,000- | 615,000 | 90.00 |
| 108 | | Eight reel-counters, without printer.. | 530,000- | 615,000 | 75.00 |
| | | Eight reel-counters, with D.S.P. or C.R.P. or both ..... | 530,000- | 615,000 | 90.00 |
| 109 | | Nine reel-counters, without printer.. | 530,000- | 615,000 | 75.00 |
| | | Nine reel-counters, with D.S.P. or C.R.P. or both ..... | 530,000- | 615,000 | 90.00 |

### 135-Principle

Press-down key operated, total adders, similar to the 35-principle.

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 129 | 16 | TA, 1c to 69c and N.S. iron cabinet.. | 273,000- | 340,500 | 20.00 |
| | 16 | Same, brass cabinet ..... | 340,500- | 510,000 | 25.00 |
| 130 | 15 | TA, 5c to $1.95 and N.S. iron cabinet. | 273,000- | 340,500 | 15.00 |
| | | Same, brass cabinet ..... | 340,500- | 510,000 | 17.50 |
| 135 | 31 | 1c to $9.99 and color system, iron cabinet ..... | 233,000- | 510,000 | 35.00 |
| 137 | 25 | 1c to $6.99 and N.S., iron cabinet.... | 233,000- | 510,000 | 35.00 |
| 138 | 21 | 1c to $2.99 and N.S., iron cabinet..... | 233,000- | 510,000 | 32.50 |
| 144 | 21 | 5c to $1.95 and N.S., iron cabinet..... | 233,000- | 510,000 | 20.00 |
| 147 | 25 | 5c to $5.95 and N.S., iron cabinet..... | 233,000- | 510,000 | 20.00 |

### Lever-set, 100-Principle

**Department Store Models:** Lever-set, crank (hand or motor) operated, total adders. Prints date, consecutive transaction number and amount, one to three times on inserted sales slip. Used principally in department stores. Square design, black enameled cabinet, wood cash drawer cabinet.

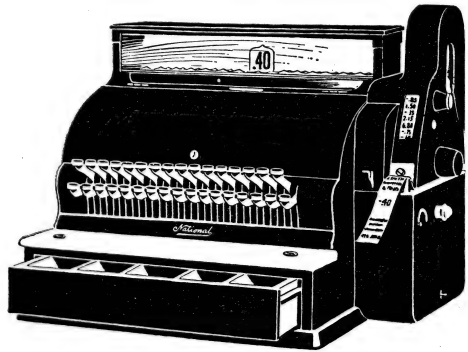
| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 140 | 4 | 1c to $99.99, I.S.P. (prints twice).... | 615,000- | 685,000 | 10.00 |
| 141 | 4 | 1c to $99.99, I.S.P. (prints twice).... | 615,000- | | 15.00 |
| 143 | 4 | 1c to $99.99, I.S.P. (prints three times) | 615,000- | | 15.00 |
| 150 | 5 | 1c to $99.99, I.S.P. (prints twice).... | 615,000- | 685,000 | 15.00 |
| 151 | 5 | 1c to $99.99, I.S.P. (prints twice).... | 615,000- | | 15.00 |
| 153 | 5 | 5 Levers, 1c to $99.99, I.S.P. (prints three times) ..... | 615,000- | | 15.00 |

**Upright Models:** (171-188) Lever-set, crank operated, total adders, equipped with detail strip printer or customer's receipt printer or both; also without printers. Brass cabinet, relief design, natural finish.

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 171 | 3 | 1c to $9.99 ..... | 223,000- | 615,000 | 20.00 |
| 172 | 4 | 1c to $99.99..... | 220,000- | 615,000 | 20.00 |
| 173 | 3 | 1c to $9.99, D.S.P. or C.R.P..... | 273,000- | 615,000 | 25.00 |
| 174 | 4 | 1c to $99.99, D.S.P. and C.R.P..... | 273,000- | 615,000 | 25.00 |
| 175 | 3 | 1c to $9.99, D.S.P. and C.R.P..... | 273,000- | 615,000 | 25.00 |
| 176 | 4 | 1c to $99.99, D.S.P. and C.R.P..... | 273,000- | 615,000 | 25.00 |
| 183 | 4 | 1c to $9.99 and 9 initials, D.S.P. and C.R.P. ..... | 290,000- | 615,000 | 30.00 |
| 184 | 5 | 1c to $99.99 and 9 initials, D.S.P. or C.R.P. ..... | 290,000- | 615,000 | 30.00 |
| 185 | 4 | 1c to $9.99 and 9 initials, D.S.P. and C.R.P. ..... | 290,000- | 615,000 | 30.00 |
| 186 | 5 | 1c to $99.99 and 9 initials, D.S.P. and C.R.P. ..... | 290,000- | 615,000 | 30.00 |

# CHICAGO CASH REGISTER EXCHANGE

133 WEST LAKE STREET, CHICAGO




We buy and sell

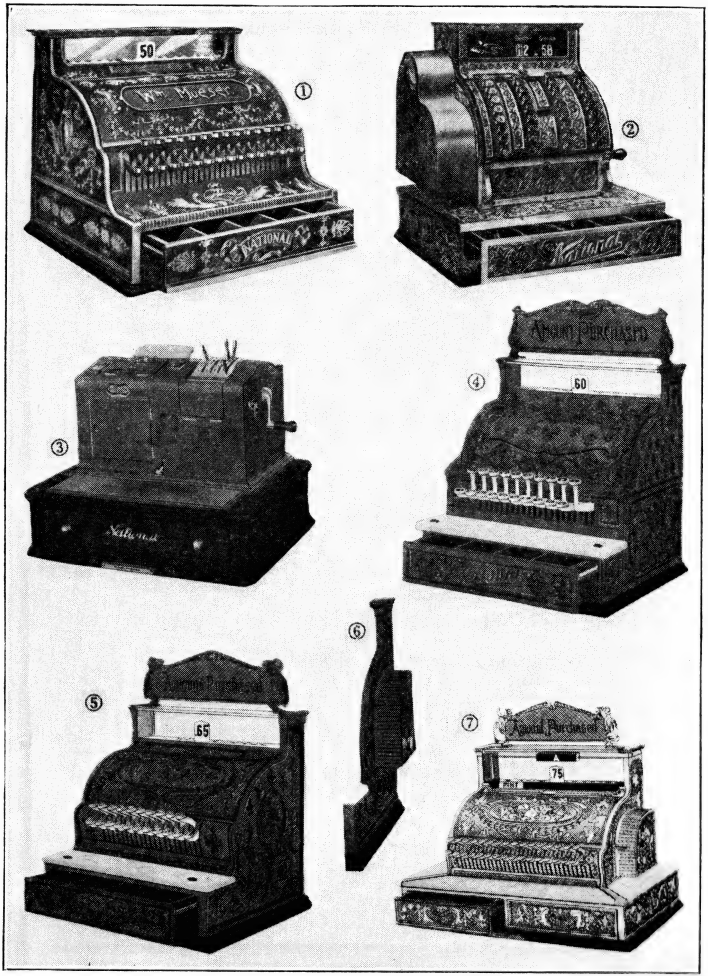
*Cash Registers of all makes, Adding Machines, Scales, Meat Slicers, and all kinds of Store and Office Equipment.*

We solicit inquiries

*from users and the trade.*

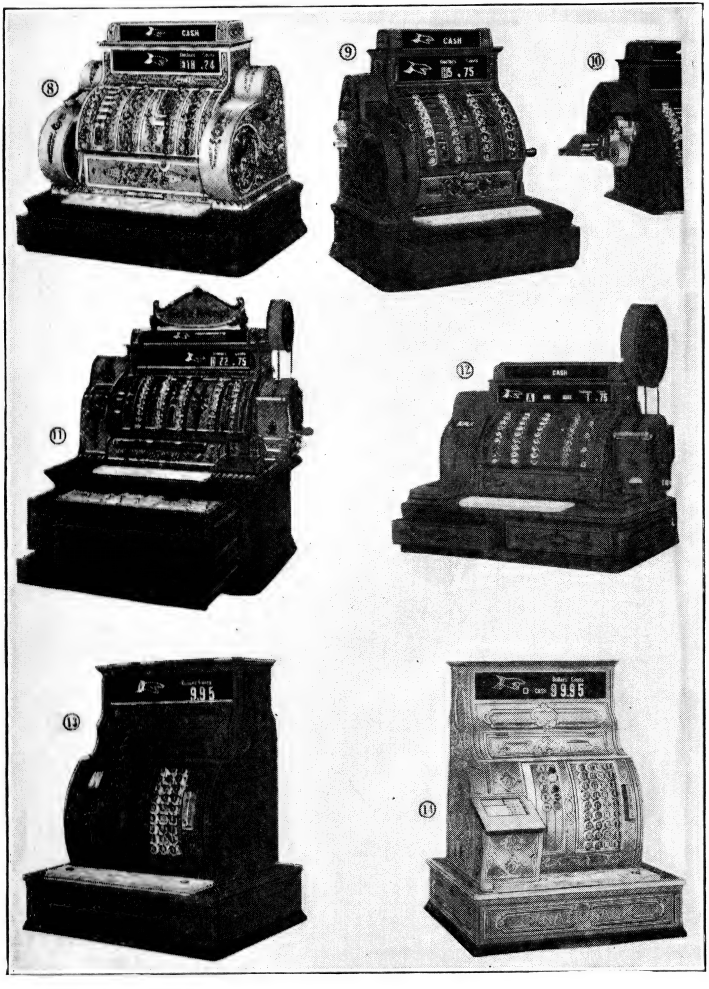
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Prompt and Courteous Service




Old Styles of National Cash Registers

## Used Machine Valuations — Cash Registers




For key to illustrations, see next page.

## NATIONAL—continued

| Model | Keys | Description | Serials between | Valuation |
|---|---|---|---|---|
| 187 | 6 | 1c to $99.99 and 9 initials, color system, D.S.P. and C.R.P. | 360,000- 615,000 | 30.00 |
| 188 | 6 | 1c to $99.99, 9 initials, color system, D.S.P. and C.R.P. | 360,000- 615,000 | 30.00 |

## 200 Class

An improvement on the earlier detail adding registers. Brass cabinets, fleur-de-lis design.

| Model | Keys | Description | Serials between | Valuation |
|---|---|---|---|---|
| 200 | 13 | Iron cabinet | 615,000- 910,000 | 7.50 |
| 201 | 13 | Iron cabinet | 615,000- 910,000 | 7.50 |
| 202 | 23 | Iron cabinet | 615,000- 910,000 | 7.50 |
| 203 | 23 | Class 200, iron cabinet | 615,000- 910,000 | 7.50 |
| 210 | 11 | Brass cabinet | 615,000- 750,000 | 7.50 |
| 211 | 11 | Brass cabinet | 615,000- 750,000 | 7.50 |
| 215 | 11 | 1c to 59c and N.S. | 615,000-1,580,000 | 12.50 |
| 216 | 11 | Class 200, 5c to $1.95 and N.S. | 615,000-1,580,000 | 12.50 |
| 220 | 20 | Brass cabinet | 615,000- 750,000 | 10.00 |
| 221 | 20 | Brass cabinet | 51,000- 750,000 | 10.00 |
| 225 | 20 | 1c to $1.99 and N.S. | 615,000-1,580,000 | 12.50 |
| 226 | 20 | 5c to $1.95 and N.S. | 615,000-1,580,000 | 12.50 |
| 230 | 25 | Brass cabinet | 615,000- 750,000 | 10.00 |
| 231 | 25 | | 615,000- 750,000 | 10.00 |
| 235 | 31 | 1c to $9.99, color system, T.A., 35 principle | 515,000- 615,000 | 45.00 |
| 235 | 25 | 1c to $5.99 and N.S., D.A. | 615,000- 910,000 | 17.50 |
| 236 | 25 | 5c to $5.95 and N.S., D.A. | 615,000- 910,000 | 17.50 |
| 237 | 27 | 1c to $8.99 and N.S., T.A., 35 principle | 515,000- 615,000 | 45.00 |
| 238 | 22 | 1c to $3.99, N.S., T.A., 35 principle | 515,000- 615,000 | 40.00 |
| 240 | 30 | Detail adder | 615,000- 750,000 | 12.50 |
| 241 | 30 | Detail adder | 615,000- 750,000 | 12.50 |
| 244 | 21 | 5c to $1.95 and N.S., T.A., 35 principle | 515,000- 615,000 | 20.00 |
| 245 | 30 | 1c to $19.99, N. S. and color system, D.A. | 615,000- 750,000 | 15.00 |
| 246 | 30 | 5c to $19.99, color system D.A. | 615,000- 750,000 | 15.00 |
| 247 | 27 | 5c to $7.95 and N.S., T.A., 35 principle | 515,000- 615,000 | 30.00 |
| 250 | 15 | 5c to $1.95 and N.S., T.A., 35 principle | 515,000- 615,000 | 20.00 |
| 251 | 15 | 1c to 59c N.S., T.A., 35 principle | 515,000- 615,000 | 22.50 |

## Key to Illustrations on Two Preceding Pages

1—35 principle, total adder (previous to 300 class).
2—79 principle, detail strip-printer, total adder.
3—Department store register, (Model 143).
4—Detail adder (200 class).
5—300 class (originally 35 principle), total adder without detail strip.
6—Side of 300 class equipped with detail strip printer.
7—300 class with detail strip, 2 counters and 2 drawers.
8—400 class, electrically operated (Model 452-E).
9—400 class, hand operated (Model 442).
10—Side of 400 class showing inserted slip-printer, and housing complete.
11—500 class lever controlled reel counters with charge drawer (Model 542-R&S-CR).
12—500 class, button-key controlled reel counters (Model 522-E-2C).
13—1000 class, old style brass cabinet.
14—1000 class, with autogram, (G device), old style brass cabinet.

## NATIONAL—continued

| Model | Keys | Description | Serials between | Valuation |
|---|---|---|---|---|
| 274 | 36 | 79 principle, T.A. | 475,000- 476,000 | None |
| 275 | 45 | 79 principle, T.A. | 475,000- 477,000 | None |
| 276 | 54 | 79 principle, T.A. | 476,000- 478,000 | None |
| 300 | 11 | Detail adder, wood cabinet | 51,000- 79,000 | None |
| | 36 | Multiple counter | 137,000- 200,000 | None |
| 301 | 11 | Detail adder, wood cabinet | 51,000- 110,000 | None |
| 301½ | 20 | Detail adder | 110,000- 154,000 | None |
| 302 | 25 | Detail adder | 110,000- 154,000 | None |
| 302½ | 25 | Detail adder | 118,000- 129,000 | None |
| 303 | 30 | Detail adder | 110,000- 154,000 | None |

### 300 Class

Press-down key operated, total adders, tied-up or free counters, with or without detail-strip printers. Superseded the earlier 35-principle registers at serial (approximately) No. 615,000, and were in turn superseded by the present 700 Class, at serial (approximately) No. 1,600,000. Brass cabinets, relief design, brass or nickel finish.

| | | | | |
|---|---|---|---|---|
| 302 | 15 | 1c to 59c | 615,000-1,610,000 | 22.50 |
| 303 | 15 | 5c to $1.95 | 615,000-1,610,000 | 25.00 |
| 304 | 15 | 1c to 59c T.A., smooth cabinet | 615,000-1,610,000 | 30.00 |
| 305 | 25 | Detail adder | 65,000- 140,000 | 10.00 |
| | 15 | 1c to $1.95 T.A., smooth cabinet | 615,000-1,610,000 | 30.00 |
| 306 | 30 | Detail adder | 65,000- 140,000 | 10.00 |
| | 22 | 1c to $3.99 T.A., Smooth cabinet | 615,000-1,610,000 | 50.00 |
| 307 | 20 | Detail adder | 128,000- 129,000 | 10.00 |
| | 21 | 5c to $1.95 T.A., smooth cabinet | 615,000-1,610,000 | 27.50 |
| 310 | 15 | 1c to 59c and N.S., no customer counter | 615,000- 750,000 | 25.00 |
| | 15 | 1c to 59c and N.S., no customer or. N.S. counters | 1,505,000-1,610,000 | 25.00 |
| 311 | 15 | 5c to $1.95 and N.S., no customer counter | 615,000- 750,000 | 22.50 |
| | 15 | 5c to $1.95 and N.S., no customer or N.S. counters | 1,505,000-1,610,000 | 22.50 |
| 312 | 15 | 1c to 59c and N.S. | 615,000-1,610,000 | 30.00 |
| 313 | 15 | 5c to $1.95 and N.S. | 615,000-1,610,000 | 27.50 |
| 316 | 15 | 1c to 59c and N.S., D\|S.P. (716) | 615,000-1,610,000 | 35.00 |
| 317 | 15 | 5c to $1.95 and N.S., D.S.P. (717) | 615,000-1,610,000 | 32.50 |
| 320 | 15 | Extended base, 1c to 59c and N.S., no customer counter | 615,000- 750,000 | 27.50 |
| | 15 | Extended base, 1c to 59c and N.S., no customer or no N.S. counters | 1,530,000-1,610,000 | 25.00 |
| 321 | 15 | Extended base, 5c to $1.95 and N.S., no customer counter | 615,000- 750,000 | 27.50 |
| | 15 | Extended base, 5c to $1.95 and N.S., no customer and no sale counters | 1,530,000-1,610,000 | 27.50 |
| 321½ | 20 | Detail adder | 128,000- 154,000 | 10.00 |
| 322 | 25 | Detail adder | 128,000- 154,000 | 10.00 |
| | 15 | Extended base, 1c to 59c and N.S. | 615,000- 750,000 | 30.00 |
| | 15 | Extended base, 1c to 59c and N.S., no customer and no N.S. counters | 1,530,000-1,610,000 | 27.50 |
| 323 | 30 | Detail adder | 132,000- 154,000 | 10.00 |
| | 15 | Extended base, 5c to $1.95 and N.S. | 615,000 750,000 | 32.50 |
| | 15 | Extended base, 5c to $1.95 and N.S., no customer and no N.S. counter | 1,530,000-1,610,000 | 32.50 |
| 324 | 21 | 1c to $2.99 and N.S., Tied-up counter | 615,000-1,610,000 | 40.00 |
| 325 | 21 | 5c to $2.95 and N.S., Tied-up counter | 615,000-1,640,000 | 32.50 |
| 326 | 15 | Extended base, 1c to 59c and N.S. | 615,000- 750,000 | 35.00 |

## Cash Registers — Used Machine Valuations

### NATIONAL—continued

| Model | Keys | Description | Serials between | Valuation |
|---|---|---|---|---|
| 327 | 15 | Extended base, 5c to $1.95 N.S. | 615,000- 750,000 | 35.00 |
| 328 | 21 | 1c to $3.99 and N.S. | 615,000-1,640,000 | 45.00 |
| 330 | 11 | 1c to $3.99 and N.S. | 65,000- 118,000 | 30.00 |
| | 22 | 1c to $3.99 and N.S., no customer counter | 615,000- 750,000 | 50.00 |
| 331 | 21 | 5c to $1.95 and N.S. | 51,000- 118,000 | 30.00 |
| | 22 | 5c to $1.95 and N.S., no customer counter | 615,000- 750,000 | 27.50 |
| 332 | 22 | 1c to $3.99 and N.S. | 51,000-1,610,000 | 52.50 |
| 333 | 21 | 5c to $1.95 and N.S. | 615,000-1,610,000 | 32.50 |
| 335 | 28-29 | Total adder | 65,000- 154,000 | 32.50 |
| 336 | 22 | 1c to $3.99 and N.S., D.S.P. (728) | 615,000-1,610,000 | 65.00 |
| 337 | 21 | 5c to $1.95 and N.S., D.S.P. | 615,000-1,610,000 | 35.00 |
| 338 | 24 | 1c to $5.99 and N.S., D.S.P. | 73,000- 118,000 | 62.50 |
| 339 | 27 | 5c to $9.95 and N.S., D.S.P. | 90,000- 154,000 | 35.00 |
| 340 | 27 | 1c to $8.99 and N.S., no customer counter | 615,000- 750,000 | 40.00 |
| 341 | 27 | 5c to $7.95 and N.S., no customer counter | 615,000- 750,000 | 30.00 |
| 342 | 27 | 1c to $8.99 and N.S. | 615,000- 910,000 | 60.00 |
| 343 | 29-31 | 1c to $19.99 N.S., T.K. and Ch. | 90,000- 154,000 | 50.00 |
| | 27 | 5c to $7.95 and N.S. | 615,000- 910,000 | 35.00 |
| 346 | 27 | 1c to $8.99 and N.S., D.S.P. (746) | 615,000-1,610,000 | 75.00 |
| 347 | 27 | 5c to $7.95 and N.S., D.S.P. | 615,000-1,610,000 | 35.00 |
| 348 | 27 | 1c to $5.99 and N.S., D.S.P. | 615,000-1,500,000 | 70.00 |
| 349 | 27 | 5c to $6.95 and N.S., 3 bar keys, D.S.P. | 615,000-1,610,000 | 35.00 |
| 350 | 33 | 1c to $29.99 color system, no customer counter | 615,000- 750,000 | 65.00 |
| 351 | 33 | 5c to $19.95 color system, no customer counter | 615,000- 750,000 | 35.00 |
| 352 | 33 | 1c to $29.99 color system, no customer counter | 615,000- 910,000 | 70.00 |
| 353 | 33 | 5c to $19.95 color system, no customer counter | 615,000- 910,000 | 35.00 |
| 356 | 33 | 1c to $29.99 color system, D.S.P. | 615,000-1,610,000 | 75.00 |
| 357 | 33 | 5c to $19.95 color system, D.S.P. | 615,000- 960,000 | 60.00 |
| 358 | 33 | 1c to $19.99 T.K. and N.S., D.S.P. | 615,000-1,500,000 | 75.00 |
| 359 | 33 | 5c to $19.95, N.S. and 3 bar keys, D.S.P. | 615,000-1,610,000 | 60.00 |
| 360 | 37 | 1c to $69.99 and N.S., color system, no customer counter | 615,000- 750,000 | 75.00 |
| 361 | 37 | 5c to $59.95 and N.S., color system, no customer counter | 615,000- 750,000 | 45.00 |
| 362 | 29 | Combination T.A. and D.A., wood cabinet | 92,000- 103,000 | 10.00 |
| 362 | 37 | 1c to $69.99, N.S. and color system... | 615,000- 910,000 | 75.00 |
| 363 | 37 | 5c to $59.95, N.S. and color system... | 615,000- 910,000 | 45.00 |
| 366 | 37 | 1c to $69.99, N. S. and color system, D.S.P. | 615,000- 910,000 | 80.00 |
| 367 | 37 | 5c to $59.95, N.S. and color system, D.S.P. | 615,000- 910,000 | 50.00 |
| 367-CD | 37 | 5c to $5.95, V.K. and 13 waiter keys, D.S.P. (767-CD) | 750,000-1,570,000 | 60.00 |
| 368 | 37 | 1c to $29.99, N.S. and color keys, D.S.P. | 615,000- 910,000 | 75.00 |
| 370 | 18,19-36 | 79 Principle, 5c to $9.95, iron cabinet. | 51,000- 154,000 | 20.00 |
| 371 | 20-27 | Total adder, 79 principle, 5c to $19.95, iron cabinet | 51,000- 154,000 | 20.00 |
| 372 | 28 | 79 Principle, 1c to $19.99, iron cabinet | 51,000- 73,000 | 25.00 |

## NATIONAL—continued

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 372 | 36 | 79 Principle, 1c to $99.99 | 124,000- | 154,000 | 25.00 |
| 373 | 20 | 79 Principle, 5c to $19.95, D.S.P., iron cabinet | 51,000- | 73,000 | 25.00 |
| 374 | 36 | 79 Principle, 1c to $99.99 and push button | 58,000- | 154,000 | None |
| 374½ | 36 | 79 Principle, 1c to $99.99 and push button | 67,000- | 73,000 | None |
| 375 | 36 | 79 Principle, 1c to $99.99 | 118,000- | 128,000 | None |
| 377 | 36 | 79 Principle, 1c to $99.99 and release key wood cabinet | 110,000- | 154,000 | None |
| 400 | | 4 Levers, 1c to $99.99 | 350,000- | 615,000 | None |
| 401 | | 5 Levers, 1c to $999.99 | 350,000- | 615,000 | None |
| 410 | | 4 Levers, 1c to $99.99 | 470,000- | 615,000 | None |

### 400 Class

Push-in key set, crank operated, total adders. Made with various styles of printers; also without printers. This class superseded the earlier 79-principle registers at serial (approximately) No. 615,000 and were in turn superseded by the present 800 Class, at serial (approximately) No. 1,600,000. Brass cabinets, relief design, brass or nickel finish.

| Model | Keys | Description | Serials between | | Valuation |
|---|---|---|---|---|---|
| 410 | 24 | 1c to $5.99 and N.S. | 615,000- | 660,000 | 50.00 |
| | 21 | 1c to $2.99 and N.S. | 660,000- | 750,000 | 45.00 |
| 411 | | 5 Levers, 1c to $999.99 | 470,000- | 615,000 | None |
| | 24 | 1c to $5.99 and N.S., D.S.P. | 615,000- | 660,000 | 55.00 |
| | 21 | 1c to $2.99 and N.S., D.S.P. | 660,000- | 750,000 | 50.00 |
| 415 | 26 | 1c to $7.99 and N.S. | 660,000- | 815,000 | 55.00 |
| 416 | 26 | 1c to $7.99 and N.S., D.S.P. | 615,000- | 1,500,000 | 65.00 |
| 420 | 31 | 1c to $9.99 and 4 special keys | 615,000- | 910,000 | 70.00 |
| 421 | 31 | 1c to $9.99 and 4 special keys, D.S.P. | 615,000- | 1,500,000 | 80.00 |
| 440 | 37 | 1c to $69.99 and 4 special keys, no printer | 615,000- | 910,000 | 70.00 |
| 441 | 36 | 1c to $9.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. or C.R.P. | 615,000- | 1,000,000 | 75.00 |
| | | | 1,000,000- | 1,600,000 | 85.00 |
| | | If 5c key arrangement deduct | | | 20.00 |
| 442 | 36 | 1c to $9.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. and C.R.P. | 615,000- | 1,000,000 | 85.00 |
| | | | 1,000,000- | 1,600,000 | 100.00 |
| | | If 5c key arrangement deduct | | | 30.00 |
| 443 | 36 | 1c to $9.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. and I.S.P. | 615,000- | 1,500,000 | 75.00 |
| 444 | 36 | 1c to $9.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. and C.S.R.P. | 615,000- | 1,000,000 | 85.00 |
| | | | 1,000,000- | 1,600,000 | 95.00 |
| | | If 5c key arrangement deduct | | | 30.00 |
| 445 | 36 | 1c to $9.99, R.A., P.O., Ch. and 6 initial keys, D.S.P., C.R.P. and N.P. | | | 90.00 |
| 446 | 36 | Same as 441 but with wide D.S.P., 1c key arrangement | 615,000- | 1,600,000 | 85.00 |
| | | 5c key arrangement | | | 65.00 |
| 447 | 36 | Same as 442 but with wide D.S.P., 1c key arrangement | 615,000- | 1,600,000 | 90.00 |
| | | 5c key arrangement | | | 60.00 |
| 449 | 36 | Same as 444 but with wide D.S.P., 1c key arrangement | 615,000- | 1,600,000 | 100.00 |
| | | 5c key arrangement | | | 75.00 |

## NATIONAL—continued

| Model | Keys | Description | Serials between | Valuation |
|---|---|---|---|---|
| 450 | 46 | 1c to $699.99 and 4 special keys, no printer | 615,000- 815,000 | 80.00 |
| 451 | 45 | 1c to $99.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. or C.R.P. | 615,000-1,000,000 | 90.00 |
| | | | 1,000,000-1,600,000 | 100.00 |
| | | If 5c key arrangement deduct | | 25.00 |
| 452 | 45 | 1c to $99.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. and C.R.P. | 615,000-1,000,000 | 100.00 |
| | | | 1,000,000-1,600,000 | 110.00 |
| | | If 5c key arrangement deduct | | 40.00 |
| 453 | 45 | 1c to $99.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. and I.S.P. | 615,000-1,500,000 | 75.00 |
| 454 | 45 | 1c to $99.99, R.A., P.O., Ch. and 6 initial keys, D.S.P. and C.S.R.P. | 615,000-1,000,000 | 100.00 |
| | | | 1,000,000-1,500,000 | 110.00 |
| | | If 5c key arrangement deduct | | 40.00 |
| 455 | 45 | 1c to $99.99, R.A., P.O., Ch. and 6 initial keys, D.S.P., C.R.P. and N.P. | 615,000-1,600,000 | 120.00 |
| 456 | 45 | Same as 451 but with wide D.S.P. | 615,000-1,600,000 | 90.00 |
| 457 | 45 | Same as 452 but with wide D.S.P. | 615,000-1,600,000 | 110.00 |
| 459 | 45 | Same as 454 but with wide D.S.P. | 615,000-1,600,000 | 110.00 |
| 460 | 55 | 1c to $6,999.99 and 4 special keys | 615,000- 815,000 | 85.00 |
| 461 | 54 | 1c to $699.99, R.A., P.O., Ch. and 9 initial keys, D.S.P. | 615,000- 815,000 | 85.00 |
| 462 | 54 | 1c to $699.99, R.A., P.O., Ch. and 9 initial keys, D.S.P. and C.R.P. | 615,000-1,480,000 | 85.00 |
| 463 | 54 | 1c to $699.99, R.A., P.O., Ch. 9 initial keys, D.S.P. and I.S.P. | 615,000-1,500,000 | 85.00 |
| 464 | 54 | 1c to $699.99 R.A., P.O., Ch. and 9 initial keys, D.S.P. and C.S.R.P. | 615,000-1,500,000 | 85.00 |
| 465 | 54 | 1c to $699.99, R.A., P.O., Ch. and 9 initial keys, D.S.P., C.R.P. and N.P. | 615,000-1,500,000 | 85.00 |
| 467 | 54 | Same as 462 but with wide D.S.P. | 615,000-1,600,000 | 85.00 |
| 469 | 54 | Same as 464 but with wide D.S.P. | 615,000-1,600,000 | 85.00 |

### 500 Class

Push-in key set, crank operated, total adders. Reel construction providing individual totalizing counters in addition to main counter. Equipped with various styles of printers. This class superseded the 100-principle, at serials (approximately) No. 615,000 and was in turn superseded by the 900 Class, at serial (approximately) No. 1,600,000. Registers of this class are equipped with 36 to 45 keys and a control lever for reel counter. Brass cabinets, relief design, brass or nickel finish.

The first figure of the model number denotes the class.

The second figure of the model number denotes the number of reel counters.

The third figure of the model number denotes the style of printer.

| Detail Strip Printer | | Detail Strip and Receipt Printer | | Detail Strip and Slip Printer | | Detail Strip and Stub Receipt Printer | |
|---|---|---|---|---|---|---|---|
| Model | Valuation | Model | Valuation | Model | Valuation | Model | Valuation |
| 1c to $99.99 | | 1c to $99.99 | | 1c to $99.99 | | 1c to $99.99 | |
| 521.... | $100.00 | 522.... | $120.00 | 523.... | $110.00 | 524.... | $120.00 |
| 531.... | 105.00 | 532.... | 130.00 | 533.... | 115.00 | 534.... | 125.00 |
| 541.... | 110.00 | 542.... | 140.00 | 543.... | 125.00 | 544.... | 135.00 |
| 551.... | 115.00 | 552.... | 145.00 | 553.... | 130.00 | 554.... | 140.00 |
| 561.... | 120.00 | 562.... | 150.00 | 563.... | 135.00 | 564.... | 145.00 |

## NATIONAL—continued

| Detail Strip Printer 1c to $99.99 | | Detail Strip and Receipt Printer 1c to $99.99 | | Detail Strip and Slip Printer 1c to $99.99 | | Detail Strip and Stub Receipt Printer 1c to $99.99 | |
|---|---|---|---|---|---|---|---|
| Model | Valuation | Model | Valuation | Model | Valuation | Model | Valuation |
| 571.... | $125.00 | 572.... | $150.00 | 573.... | $140.00 | 574.... | $150.00 |
| 581.... | 125.00 | 582.... | 155.00 | 583.... | 145.00 | 584.... | 150.00 |
| 591.... | 125.00 | 592.... | 160.00 | 593.... | 145.00 | 594.... | 150.00 |

| Detail Strip Printer 6 banks of keys and lever bank | | Detail Strip and Receipt Printer 6 banks of keys and lever bank | | Detail Strip and Slip Printer 6 banks of keys and lever bank | | Detail Strip and Stub Receipt Printer 6 banks of keys and lever bank | |
|---|---|---|---|---|---|---|---|
| Model | Valuation | Model | Valuation | Model | Valuation | Model | Valuation |
| 526.... | $100.00 | 527.... | $120.00 | 528.... | $110.00 | 529.... | $120.00 |
| 536.... | 105.00 | 537.... | 130.00 | 538.... | 115.00 | 539.... | 125.00 |
| 546.... | 110.00 | 547.... | 140.00 | 548.... | 125.00 | 549.... | 135.00 |
| 556.... | 115.00 | 557.... | 145.00 | 558.... | 130.00 | 559.... | 140.00 |
| 566.... | 120.00 | 567.... | 150.00 | 568.... | 135.00 | 569.... | 145.00 |
| 576.... | 125.00 | 577.... | 150.00 | 578.... | 145.00 | 579.... | 155.00 |
| 586.... | 125.00 | 587.... | 155.00 | 588.... | 155.00 | 589.... | 165.00 |
| 596.... | 125.00 | 597.... | 160.00 | 598.... | 160.00 | 599.... | 175.00 |

Deduct for 5c key arrangement..... 40%
Deduct for N model .....$20.00

### 600 Class

Similar to the lever-operated upright models of the 100 Class, except that they have smooth cabinets in olive green finish. Some later types were of the push-in-key type with smooth enameled cabinets, imitation wood finish, similar to the 800 Class.

| Model | Description | Serials between | Valuation |
|---|---|---|---|
| 622 | Lever-set, 4 banks, 1c to $2.99; D.S.P. and C.R.P. (672) | 1,610,000-1,630,000 | $35.00 |
| 627 | Push-in-key set, 1c to $5.99; D.S.P. and C.R.P. | | 35.00 |
| 627 | Lever-set, 4 banks, 1c to $3.99, 4 initial keys; D.S.P. and C.R.P. | | 35.00 |
| 632 | Lever-set, 4 banks, 1c to $5.99; D.S.P. and C.R.P. (682) | 1,610,000-1,630,000 | 35.00 |
| 642 | Lever-set, 4 banks, 1c to $5.99 and color system; D.S.P. and C.R.P. (692) | 1,610,000-1,630,000 | 35.00 |
| 672 | Lever-set, 4 banks, 1c to $2.99, P.O.; D.S.P. and C.R.P. | 1,630,000-1,700,000 | 35.00 |
| 657 | Push-in-key set, 1c to $3.99, C. and P.O.; D.S.P. and C.R.P. | | 65.00 |
| 667 | Push-in-key set, 1c to $5.99, C., R.O., Ch., P.O.; D.S.P. and C.R.P. | | 65.00 |
| 682 | Lever-set, 4 banks 1c to $5.99, P.O.; D.S.P. and C.R.P. | 1,630,000-1,700,000 | 35.00 |
| 692 | Lever-set, 4 banks, 1c to $5.99 and color system; D.S.P. and C.R.P. | 1,630,000-1,700,000 | 35.00 |

### 700 Class

Press-down key operated, total adders, with or without detail strip printers. Smooth enameled cabinets in imitation wood finish; an improvement upon the 300 Class registers, which they superseded, at serial (approximately) No. 1,600,000. See complete description in catalog section.

## NATIONAL—continued

| Model | Keys | Description | Valuation |
|---|---|---|---|
| *710 | 15 | 1c to 59c and NS | 27.50 |
| *711 | 15 | 5c to $1.95 and NS | 27.50 |
| 712 | 15 | 1c to 59c and NS | 30.00 |
| 713 | 15 | 5c to $1.95 and NS | 30.00 |
| *716 | 15 | 1c to 59c and N.S.; D.S.P. | 45.00 |
| *717 | 15 | 5c to $1.95 and N.S.; D.S.P. | 47.50 |
| 720 | 21 | 1c to $1.99 and N.S. | 50.00 |
| 721 | 21 | 5c to $1.95 and N.S. | 30.00 |
| *722 | 21 | 1c to $2.99 and N.S. Tied up counter | 35.00 |
| *724 | 22 | 1c to $3.99 and N.S. | 60.00 |
| *725 | 21 | 5c to $1.95 and N.S. | 50.00 |
| 726 | 21 | 1c to $1.99 and N.S.; D.S.P. | 60.00 |
| *728 | 22 | 1c to $3.99 and N.S.; D.S.P. | 80.00 |
| *730 | 24 | 1c to $5.99 and N.S. | 62.50 |
| *731 | 23 | 5c to $3.95 and N.S. | 50.00 |
| 732 | 22 | 1c to $3.99 and N.S. | 60.00 |
| 733 | 21 | 5c to $1.95 and N.S. | 50.00 |
| 736 | 22 | 1c to $3.99 and N.S.; D.S.P., below 1,872,639 | 80.00 |
| *736 | 24 | 1c to $5.99 and N.S. or 1c to $4.99 N.S. and P.O., D.S.P. above 1,872,639 | 90.00 |
| 736-2-T | | See "Tax Registers," this section | |
| *737 | 23 | 5c to $3.95 N.S. or 1c to $2.95 N.S., P.O.; D.S.P. | 55.00 |
| 737-2-T | | See "Tax Registers," this section | |
| *740 | 27 | 1c to $8.99 and N.S. or 1c to $7.99, N.S. and P.O. | 65.00 |
| *746 | 27 | 1c to $8.99 and N.S., D.S.P. | 100.00 |
| 746-2-T | | See "Tax Registers," this section | |
| *747 | 27 | 5c to $7.95 and N.S., D.S.P. | 65.00 |
| 747-2-T | | See "Tax Registers," this section | |
| *748 | 27 | 1c to $5.99 and N.S., D.S.P. | 95.00 |
| 749 | 27 | 5c to $6.95 and N.S.; D.S.P. | 70.00 |
| *750 | 33 | 1c to $29.99, N.S., P.O., R.A. | 75.00 |
| *756 | 33 | 1c to $29.99, Ch., R.A., P.O., N.S.; D.S.P. | 110.00 |
| 756-2-T | | See "Tax Registers," this section | |
| 757-2-T | | See "Tax Registers," this section | |
| *757 | 33 | 5c to $19.95, Ch., R.A., P.O., N.S.; D.S.P. | 70.00 |
| *757-CD | 33 | 5c to $49.95, N.S.; C.D.; D.S.P. | 80.00 |
| 759 | 33 | 5c to $19.95 and N.S.; D.S.P. | 75.00 |
| 767 | 37 | 5c to $59.95 and N.S.; D.S.P. | 75.00 |
| *767-CD | 37 | 5c to $89.95 or $99.99, V.K.; C.D.; D.S.P. | 80.00 |

* Denotes models of present line.

### 800 Class, Ticket Issuing Type

Small square design, with or without total adding counters; for imprinting admission tickets or checks for theatres, restaurants, etc. Key-set, crank operated; superseded by the 1200 Class, at serial (approximately) No. 1,540,000. Smooth steel cabinets, black enamel finish; equipped with cast iron stands. (See ticket issuing registers, catalog section).

Models 801 to 814.....No Valuation

### 800 Class

Push-in key set, crank (hand or electric) operated; equipped with various styles of printers; smooth enameled cabinets in black or imitation wood finish; an improvement upon the 400 Class, which they superseded. Serial numbers start at (approximately) No. 1,480,000. See complete description in catalog section.

NOTE.—Valuations of models with 5c key arrangement are 40% less than valuations shown.

## NATIONAL—continued

| Model | Keys | Description | Valuation |
|---|---|---|---|
| 817 | 22 | 1c to $4.99, D.S.P. and C.R.P. | 90.00 |
| 822 | 26 | 1c to $5.99, R.A., P.O., Ch., D.S.P. and C.R.P. | 90.00 |
| *841 | 27 | 1c to $9.99, R.A., P.O., Ch., C.R.P. or D.S.P. | 100.00 |
| *842 | 27 | 1c to $99.99, R.A., P.O., Ch., C.R.P. and D.S.P. | 120.00 |
| *844 | 27 | 1c to $9.99, R. A., P.O., Ch., C.S.R.P. and D.S.P. | 120.00 |
| *845 | 27 | 1c to $9.99, R.A., P.O., Ch., C.R.P., D.S.P. and N.P. | 130.00 |
| *846 | | Same as 841 but wide D.S.P. | 90.00 |
| *847 | | Same as 842 but wide D.S.P. | 125.00 |
| *849 | | Same as 844 but wide D.S.P. | 125.00 |
| *851 | 36 | 1c to $99.99, R.A., P.O., Ch., C.R.P. or D.S.P. | 120.00 |
| *852 | 36 | 1c to $99.99, R.A., P.O., Ch., C.R.P. and D.S.P. | 125.00 |
| *854 | 36 | 1c to $9.99, R.A., P.O., Ch., C.S.R.P. and D.S.P. | 130.00 |
| *855 | 36 | 1c to $99.99, R.A., P.O., Ch., C.R.P., D.S.P. and N.P. | 140.00 |
| *856 | | Same as 851 but wide D.S.P. | 100.00 |
| *857 | | Same as 852 but wide D.S.P. | 130.00 |
| *859 | | Same as 854 but wide D.S.P. | 130.00 |
| *862 | 42 | 1c to $699.99, R.A., P.O., Ch., C.R.P. and D.S.P. | 150.00 |
| *864 | 42 | 1c to $699.99, R.A., P.O., Ch., C.S.R.P. and D.S.P. | 150.00 |
| *865 | 42 | 1c to $699.99, R.A., P.O., Ch., C.R.P., D.S.P. and N.P. | 150.00 |
| *867 | | Same as 862 but wide D.S.P. | 160.00 |
| *869 | | Same as 864 but wide D.S.P. | 160.00 |

* Denotes models of present line.

## 900 Class

Push-in key set, crank (hand or electric) operated; equipped with various styles of printers, with or without reel construction. Smooth enameled cabinets in black or imitation wood finish. Serial numbers start at (approximately) No. 1,600,000.

The first figure of the model number denotes the class.

The second figure of the model number denotes the number of reel counters.

The third figure of the model number denotes the style of printer.

The second and third figures in model numbers of four figures (double reel registers) denote the number of counters on both reels. See complete description in catalog section.

**Detail Strip and Receipt Printer 1c to $99.99**

| Model | Valuation |
|---|---|
| 902 | $160.00 |
| 922 | 167.50 |
| 932 | 175.00 |
| 942 | 182.50 |
| 952 | 190.00 |
| 962 | 197.50 |
| 972 | 205.00 |
| 982 | 220.00 |
| 992 | 225.00 |

**Detail Strip and Slip Printer 1c to $99.99**

| Model | Valuation |
|---|---|
| 903 | $150.00 |
| 923 | 155.00 |
| 933 | 160.00 |
| 943 | 165.00 |
| 953 | 170.00 |
| 963 | 175.00 |
| 973 | 182.50 |
| 983 | 190.00 |
| 993 | 200.00 |

**Detail Strip and Stub Receipt Printer 1c to $99.99**

| Model | Valuation |
|---|---|
| 904 | $160.00 |
| 924 | 165.00 |
| 934 | 170.00 |
| 944 | 180.00 |
| 954 | 190.00 |
| 964 | 195.00 |
| 974 | 200.00 |
| 984 | 210.00 |
| 994 | 210.00 |

**Detail Strip and Receipt Printer, 1c to $999.99**

| Model | Valuation |
|---|---|
| 907 | $160.00 |
| 927 | 167.50 |

**Detail Strip and Slip Printer, 1c to $999.99**

| Model | Valuation |
|---|---|
| 908 | $150.00 |
| 928 | 155.00 |

**Detail Strip and Slip Receipt Printer, 1c to $999.99**

| Model | Valuation |
|---|---|
| 909 | $160.00 |
| 929 | 165.00 |

## NATIONAL—continued

| Detail Strip and Receipt Printer, 1c to $999.99 | | Detail Strip and Slip Printer, 1c to $999.99 | | Detail Strip and Slip Receipt Printer, 1c to $999.99 | |
|---|---|---|---|---|---|
| Model | Valuation | Model | Valuation | Model | Valuation |
| 937 | 175.00 | 938 | 160.00 | 939 | 170.00 |
| 947 | 182.50 | 948 | 165.00 | 949 | 180.00 |
| 957 | 190.00 | 958 | 170.00 | 959 | 190.00 |
| 967 | 197.50 | 968 | 175.00 | 969 | 195.00 |
| 977 | 205.00 | 978 | 182.50 | 979 | 200.00 |
| 987 | 210.00 | 988 | 190.00 | 989 | 210.00 |
| 997 | 210.00 | 998 | 200.00 | 999 | 210.00 |

Deduct for 5c key arrangement ..... 40%
Deduct for N model ..... $20.00
Deduct for No back indication ..... 25.00
Deduct for Oak finish ..... 20.00
Deduct for Black finish ..... 15.00

### 1000 Class

Push-in key set, spring operated total adders, with or without detail strip printers; flexible keyboard. All models now sold (above serial, approximately, No. 1,940,000), have smooth enameled, imitation wood finish. See complete description in catalog section.

Note: Valuation of models having serial numbers below 900,000, is 20% less than amounts shown.

| Model | Keys | Description | | Valuation |
|---|---|---|---|---|
| 1022 | 18 | 1c to 99c | 700,000-1,500,000 | 40.00 |
| 1023 | 10 | 5c to 95c | 700,000-1,500,000 | 20.00 |
| 1030 | 23 | 1c to $5.99 | 700,000-1,500,000 | 45.00 |
| 1031 | 15 | 5c to $5.95 | 700,000-1,500,000 | 25.00 |
| 1032 | 27 | 1c to $9.99 | 700,000-1,500,000 | 55.00 |
| 1033 | 19 | 5c to $9.95 | 700,000-1,500,000 | 30.00 |
| 1034 | 27 | 1c to $9.99 | 700,000-1,940,000 | 60.00 |
| 1035 | 19 | 5c to $9.95 | 700,000-1,940,000 | 30.00 |
| 1036 | 23 | 1c to $5.99 | 700,000-1,940,000 | 60.00 |
| 1037 | 15 | 5c to $5.95 | 700,000-1,940,000 | 30.00 |
| 1040 | 32 | 1c to $9.99, 5 special keys | 700,000-1,500,000 | 60.00 |
| 1041 | 24 | 5c to $9.95, 5 special keys | 700,000-1,500,000 | 40.00 |
| 1042 | 36 | 1c to $9.99, 3 special, 6 clks. keys | 700,000-1,500,000 | 65.00 |
| 1043 | 28 | 5c to $9.95, 7 special, 2 clks. keys | 700,000-1,500,000 | 35.00 |
| 1044 | 28 | 1c to $5.99, 5 special | 700,000–1,500,000 | 60.00 |
| 1045 | 20 | 5c to $5.95, 5 special | 700,000–1,500,000 | 35.00 |
| 1046 | 32 | 1c to $1.99, 5 special | 700,000-1,940,000 | 35.00 |
| 1046-G | 32 | 1c to $9.99, N.S., C., R.A., Ch., P.O. | 700,000-1,940,000 | 65.00 |
| *1046-G | 32 | Enameled Cabinet (See catalog section) | 1,940,000- | 90.00 |
| 1047 | 24 | 5c to $9.95; 5 special keys | 700,000-1,940,000 | 45.00 |
| 1050 | 41 | 1c to $9.99; 5 special, 9 clks. keys | 700,000-1,500,000 | 65.00 |
| 1051 | 33 | 5c to $9.95, 5 special, 9 clks. keys | 700-000-1,500,000 | 40.00 |
| 1052 | 45 | 1c to $99.99, 3 special, 6 clks. keys | 700,000-1,500,000 | 70.00 |
| 1053 | 37 | 5c to $99.95, 3 special, 6 clks. keys | 700,000-1,500,000 | 45.00 |
| 1054 | 37 | 1c to $59.99, 5 special | 700,000-1,500,000 | 75.00 |
| 1054X-G | 41 | 1c to $99.99, N.S., C., R.A., Ch., P.O. | 700,000-1,940,000 | 80.00 |
| *1054XG | 41 | Enameled Cabinet (See catalog section) | 1,940,000- | 100.00 |
| 1054X | 41 | 1c to $99.99, 5 special keys | 700,000-1,940,000 | 85.00 |
| 1055 | 29 | 5c to $59,95, 5 special | 700,000-1,500,000 | 45.00 |

## NATIONAL—continued

| Model | Keys | Description | | Valuation |
|---|---|---|---|---|
| 1055X | 33 | 5c to $99.95, 5 special..... | 700,000-1,940,000 | 50.00 |
| 1056 | 37 | 1c to $9.99, 5 special, 5 clks. keys | 700,000-1,940,000 | 70.00 |
| 1057 | 29 | 5c to $9.95, 5 special, 5 clks. keys | 700,000-1,940,000 | 45.00 |
| 1058 | 37 | 1c to $9.99, 5 special, 5 clks. keys | 700,000-1,940,000 | 70.00 |
| 1059 | 29 | 5c to $9.95, 5 special, 5 clks. keys | 700,000-1,940,000 | 45.00 |
| 1060 | 50 | 1c to $99.99, 5 special, 9 clks. keys | 700,000-1,500,000 | 75.00 |
| 1061 | 42 | 5c to $99.95, 5 special, 9 clks. keys | 700,000-1,500,000 | 55.00 |
| 1062 | 54 | 1c to $99.99, 9 special, 9 clks. keys | 700,000-1,500,000 | 75.00 |
| 1063 | 46 | 5c to $99.95, 9 special, 9 clks. keys | 700,000-1,500,000 | 55.00 |
| 1064 | 46 | 1c to $99.99, 5 special, 5 clks. keys | 700,000-1,500,000 | 85.00 |
| 1065 | 38 | 5c to $99.95, 5 special, 5 clks. keys | 700,000-1,500,000 | 55.00 |
| 1066 | 54 | 1c to $99.99, 9 special, 9 clks. keys | 700,000-1,940,000 | 90.00 |
| 1066-G | 54 | 1c to $99.99, 9 special, 9 clks. keys | 700,000-1,940,000 | 125.00 |
| *1066-G | 54 | Enameled Cabinet .....1,040,000- | | 115.00 |
| 1067 | 46 | 5c to $99.95, 9 special, 9 clks. keys | 700,000-1,940,000 | 55.00 |
| 1068-G | 50 | 1c to $99.99, 9 special, 9 clks. keys, N.S., C., R.A., Ch., P.O..... | 700,000-1,940,000 | 100.00 |
| *1068-G | 50 | Enameled Cabinet.....1,940,000- | | 120.00 |

* Denotes models of present line.

## 1100 Class

Press-down key set, crank (hand or electric) operated, total adders. Similar in arrangement to the 700 Class. Equipped with detail strip printer and customer's receipt printer; smooth enameled cabinets, imitation wood finish. See complete description in catalog section.

| Model | Keys | Description | Valuation |
|---|---|---|---|
| *1116 | 15 | 1c to 59c and N.S..... | 52.50 |
| *1117 | 15 | 5c to $1.95 and N.S..... | 52.50 |
| *1122 | 21 | 1c to $2.99 and N.S., tied-up counter..... | 52.50 |
| 1126 | 21 | 1c to $1.99, and N.S..... | 75.00 |
| *1128 | 22 | 1c to $3.99, and N.S..... | 75.00 |
| *1136 | 24 | 1c to $4.99, N.S., P.O., or 1c to $5.99 and N.S..... | 80.00 |
| 1136-2T | | For description see "Tax Registers," this section..... | |
| *1137 | 23 | 5c to $2.95, N.S., P.O., or 5c to $3.95 and N.S..... | 60.00 |
| 1137-2T | | For description see "Tax Registers," this section.... | |
| *1142 | 27 | 1c to $8.99 and N.S., tied-up counter..... | 85.00 |
| *1142 | 28 | 1c to $5.99, N.S. and 4 clerk's keys, tied-up counter.. | 90.00 |
| *1146 | 27 | 1c to $7.99, N.S., P.O., or 1c to $8.99 and N.S..... | 90.00 |
| 1146-2T | | For description see "Tax Registers," this section..... | |
| *1147 | 27 | 5c to $6.95, N.S., P.O., or 1c to $7.95 and N.S..... | 65.00 |
| 1147-2T | | For description see "Tax Registers," this section.... | |
| *1156 | 33 | 1c to $29.99, N.S., P.O., Ch., R.A..... | 90.00 |
| 1156-2T | | For description see "Tax Registers," this section..... | |
| 1157-2T | | For description see "Tax Registers," this section..... | |

* Denotes models of present line.

## 1200 Class

Superseded the 800 Class of this style register at serial (approximately) No. 1,540,000. See complete description in catalog section.

| Model | Valuation | Model | Valuation | Model | Valuation | Model | Valuation |
|---|---|---|---|---|---|---|---|
| 1201 | 37.50 | 1206 | 40.00 | 1211 | 50.00 | 1262 | 60.00 |
| 1202 | 37.50 | 1207 | 40.00 | 1214 | 50.00 | 1267 | 60.00 |
| 1203 | 37.50 | 1208 | 50.00 | 1222 | 50.00 | | |
| 1205 | 37.50 | 1210 | 50.00 | 1227 | 50.00 | | |

## NATIONAL—continued

### 1700 Class

Press-down key set, crank (hand or electric) operated, total adders; equipped with detail strip and customer's itemized receipt printers; provides for the successive registering of individual items of a transaction in the regular way on the keys, and the taking of the total and opening of the cash drawer by the operation of a crank. Similar in key arrangement to the 700 Class. Smooth enameled cabinets in imitation wood finish.

| Model | Keys | Description | Valuation |
|---|---|---|---|
| *1722 | 20 | 1c to $2.99 and N.S. | $100.00 |
| 1726 | 20 | 1c to $1.99 and N.S. | 100.00 |
| *1728 | 21 | 1c to $3.99 | 110.00 |
| *1736 | 23 | 1c to $5.99 | 120.00 |
| *1737 | 22 | 5c to $3.95 | 75.00 |
| *1746 | 27 | 1c to $9.99 | 120.00 |
| *1747 | 27 | 5c to $8.95 | 80.00 |
| *1756 | 33 | 1c to $69.99 | 125.00 |
| *1757 | 33 | 5c to $59.99 | 80.00 |

* Denotes models of present line.

### Tax Registers

Specially constructed registers of the 700 and 1100 Classes, designed for the separate indication and totalling of revenue tax formerly levied on the sale of soft drinks and various items of merchandise. The keyboard was divided so as to register the amount of the transaction on one section and the tax on another and accumulate the totals in separate counters. These registers were manufactured only during the time that this law was in effect, between approximately May 1st, 1919 to January 1st, 1922 or approximately between serials 1,725,000 to 1,940,000.

| Model | Keys | Sale Capacity | Tax Capacity | Valuation |
|---|---|---|---|---|
| 736-2T | 22 | 1c to 59c | 1c to 6c and "No Tax" key | Not Quoted |
| 736-2T | 24 | 1c to 69c | 1c to 7c and "No Tax" key | |
| 737-2T | 22 | 5c to 65c | 1c to 7c and "No Tax" key | |
| 746-2T | 27 | 1c to 89c | 1c to 8c and "No Tax" key | |
| 747-2T | 27 | 5c to $1.95 | 1c to 10c and "No Tax" key | |
| 756-2T | 33 | 1c to $2.99 | 1c to 20c and "No Tax" key | |
| 757-2T | 33 | 5c to $3.95 | 1c to 30c and "No Tax" key | |
| 1136-2T | 24 | 1c to $69.99 | 1c to 7c and "No Tax" key | |
| 1137-2T | 22 | 5c to 65c | 1c to 7c and "No Tax" key | |
| 1146-2T | 27 | 1c to 89c | 1c to 8c and "No Tax" key | |
| 1147-2T | 27 | 5c to $1.95 | 1c to 10c and "No Tax" key | |
| 1156-2T | 33 | 1c to $2.99 | 1c to 20c and "No Tax" key | |
| 1157-2T | 33 | 5c to $3.95 | 1c to 30c and "No Tax" key | |

**700, 800 and 900 Class National**

Cash Register Cabinets Refinished

A service that means larger profits for the dealer

**AMES SUPPLY CO.** 564-72 W. Randolph St. CHICAGO

## OHIO

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models.)**

Production has not been established in sufficient quantity to determine any used valuations. In the absence of specific valuations, the list prices in the Catalog Section may be used as a guide.

## REMINGTON

**(See Catalog Section for Illustration, Descriptions and Prices of Present Models.)**

This make of register has not been on the market sufficiently long to establish definite used valuations. Valuations reported are forty per cent (40%) of the list prices shown in Catalog Section.

## ST. LOUIS

**(See Catalog Section for Illustration, Descriptions and Prices of Current Models.)**

| Description | Valuation |
|---|---|
| Any model described in Catalog Section, capacity 1c to $5.99 or less | $20.00 |
| Any model described in Catalog Section, capacity 1c to over $5.99 | 30.00 |
| Any model described in Catalog Section, with 5c key arrangement only | 15.00 |
| Any model not described in Catalog Section | 10.00 |

LEEDS LEADS ALL
COMPLETE STORE OUTFITTERS

**Mr. Dealer! Make More Profit by Selling Our**

**CASH REGISTER STANDS**
Shipped K. D. in Oak, Mahogany and Walnut Finish

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Our Cracked Ice and Salt Cases are Winners

**GROCER COMBINATION DISPLAY COUNTERS**
The Only Real Sanitary Grocer Counter

**LEEDS SHOW CASE & FIXTURE WORKS**
**Manufacturers of Modern Store Equipment**
**KANSAS CITY, MO., U. S. A.**

# Check Protecting Devices

## CHECKOMETER

Made by the Checkometer Company, 417 South Dearborn Street, Chicago.

| Model | Began at Serial | Year | Description | Valuation |
|---|---|---|---|---|
| A | 1,001 | May, 1920 | Did not show indication of set up | $ 6.00 |
| B | 3,200 | Dec., 1920 | Similar to Model A, with white metal type instead of brass | 7.00 |
| C | 6,700 | May, 1921 | Improved inking system, improved check guides, adjustable from both sides | 8.00 |
| D | 11,500 | Jan., 1922 | Front feed, improved inking system | 9.00 |
| E | 39,000 | July, 1922 | Green finish; present model | 12.00 |

## DEFIANCE

Made by the Defiance Check Writer Corporation, Rochester, New York.

| Model | Description | Valuation |
|---|---|---|
| SS | Dividend Check Writer | |
| GG | Payroll Model | $10.00 |
| G-6 | General Utility Model | 15.00 |
| 1 | Commercial Check Writer | 15.00 @ 20.00 |

## F & E

Made by the Hedman Manufacturing Company, Chicago, Illinois.

| Model | Description | Valuation |
|---|---|---|
| A | | $2.50 |
| B | | 2.50 |
| C | | 3.00 @ 4.00 |
| D | | 4.00 |
| M | | 6.00 |
| R | Without ink roll | 5.00 |
| R | With ink roll | 8.00 |
| T | Green finish | With individual die 5.00 |
| | | With "Pay" die 9.00 @ 10.00 |
| | Premier Model, mahogany finish | With individual die 5.00 |
| | | With "Pay" die 12.00 |
| | Electric Voucher Model | With "Pay" die 15.00 @ 20.00 |

**Note:** Deduct for all models equipped to write on voucher checks $2.00

## PEERLESS

| Junior Models | | | Senior Models | | |
|---|---|---|---|---|---|
| Serial | Year Made | Valuation | Serial | Year Made | Valuation |
| 10,001 to 29,999 | 1914 | $6.00 | 1,000 to 12,997 | 1912-1914 | $6.00 |
| 30,000 to 56,999 | 1915 | 6.00 | 75,001 to 76,599 | 1915 | 6.00 |
| 57,000 to 59,338 | 1916 | 6.00 | 76,600 to 77,699 | 1916 | 6.00 |
| 59,339 to 62,999 | 1917 | 8.00 | 77,700 to 80,150 | 1917 | 6.00 |
| 63,000 to 65,599 | 1918 | 8.00 | 80,151 to 82,475 | 1918 | 7.00 |
| 65,600 to 71,199 | 1919 | 8.00 | 82,476 to 82,978 | 1919 | 7.00 |
| 71,200 to 74,999 | 1920 | 8.00 | 82,979 to 83,340 | 1920 | 7.00 |
| 90,001 to 92,199 | 1921 | 8.00 | 83,341 to 83,560 | 1921 | 7.00 |
| 93,000 and over | 1922 | 8.00 | 83,561 and over | 1922 | 7.00 |

## SAFEGUARD

| Model | | Year Made | | Valuation |
|---|---|---|---|---|
| "Not Over" models | | 1913 | and previous | |
| R | 13,000 | 1913 | Without lock handle | $10.00 |
| R | 13,000 | 1913 | With lock handle | 12.00 |
| S | 100,000 | 1920 | Without insured dial | 13.00 |
| S | 100,000 | 1920 | With insured dial | 15.00 |
| S | Over 135,000 | | With insured dial | 17.00 |
| W | 175,000 | 1923 | (See Catalog Section) | 17.50 |
| International | 175,000 | 1923 | (See Catalog Section) | 10.00 |

## TODD

Manufactured by the Todd Protectograph Company, Rochester, New York.

**"Not Over" Protectographs:**

| Model | Serials | Year Made | Valuation |
|---|---|---|---|
| A to G | to 75,000 | 1900-1909 | .... |
| H | 75,001 to 325,000 | 1909-1915 | .... |
| K-A | 325,001 to 326,805 | 1913 and later | 2.50 |
| H | 425,000 and over | 1916 and later | 2.50 |

**Protectograph Check Writers:**

**Note:** Add $1.00 to valuation shown for check writers having serial numbers over 700,000, equipped with check shelf on top to rear of dial. Add for aluminum base, $5.00; add for electric drive, $10.00.

| Description | Year Made | Valuation |
|---|---|---|
| Electrotype (Small Type); white dial: | | |
| Serials 200,000 to 289,999 | 1913-1914 | .. |
| Electrotype (Large Type); white dial: | | |
| Serials 300,000 to 309,999 | 1914 | .. |
| Bronze Type; white dial: | | |
| Serials 310,000 to 464,448 | 1914-1916 | $ 5.00 @ 7.00 |
| Closed Case Model; white dial; push button release: | | |
| Serials 500,000 to 519,505 | 1914 | 5.00 @ 7.00 |
| Hinged Case Model; white dial; automatic release: | | |
| Serials 591,506 to 552,999 | 1915 | 5.00 @ 7.00 |
| Standard Model, 33 characters; pink dial: | | |
| Serials 553,000 to 590,999 | 1915 | 7.00 @ 8.00 |
| 591,000 to 641,999 | 1916 | 9.00 @ 10.00 |
| 642,000 to 690,999 | 1917 | 9.00 @ 10.00 |
| 691,000 to 715,999 | 1918 | 9.00 @ 10.00 |
| 716,000 to 815,999 | 1919 | 9.00 @ 10.00 |
| 816,000 to 834,999 | 1920 | 10.00 |
| 835,000 to 837,999 | 1921 | 10.00 |
| 838,000 and over | 1922 and later | 10.00 |
| Exactly Model, 38 characters; pink dial: | | |
| Serials 729,000 to 749,999 | 1919 | 10.00 @ 12.00 |
| 800,000 to 824,999 | 1919 | 10.00 @ 12.00 |
| 825,000 to 829,999 | 1920 | 10.00 @ 12.00 |
| Exactly Model, black enamel case: | | |
| Serials 850,000 to 868,594 | 1920 | 12.00 @ 14.00 |
| Exactly Model, green enamel case: | | |
| Serials 868,595 to 884,999 | 1920 | 14.00 @ 15.00 |
| 885,000 to 899,999 | 1921 | 14.00 @ 15.00 |
| 900,000 to 906,000 | 1920 | 14.00 @ 15.00 |
| 907,000 to 914,000 | 1921 | 14.00 @ 15.00 |
| 914,001 and over | 1922 and later | 14.00 @ 15.00 |

## TODD—continued

| | | |
|---|---|---|
| Bank Model, with automatic ink reservoir: | | |
| Serials 750,000 to 758,999 | 1916-1919 | .. |
| Double Quick Model, writing two words at one time: | | |
| Serials 975,000 and over | Feb. 1923 and later | 15.00 @ 20.00 |
| Thoroughbred Model, writing words and/or figures: | | |
| Serials 990,000 and over | Sept. 1923 and later | 15.00 @ 20.00 |

## NEW ERA

| | |
|---|---|
| Model No. 3 | $ 2.00 |
| Model No. 4 | 3.00 |
| Model No. 5 | 5.00 |

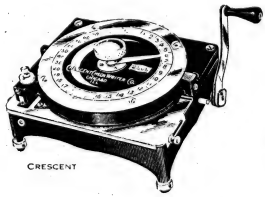
**NOTE:** All above machines must space properly.

## MISCELLANEOUS

| Name and Maker | Valuation |
|---|---|
| Acme-Rite (Combinator Company, 1427 Carroll Ave., Chicago) | $5.00 @ 7.50 |
| Beebe (See Catalog Section for Description) | Market limited. No basis of valuation. |
| Defendograph (Todd) | |
| Diminunette (See Catalog Section for Description) | |
| Dupligraph (Todd) | |
| Everite (See Catalog Section for Description) | |
| Crescent (Crescent Check Writer Company, Chicago) | |
| International (See Catalog Section for Description) | |
| New Safety (See Catalog Section for Description) | |
| Personal (Todd) | |
| Safety Protector (Boston, Mass.) | |
| Security (Todd) | |
| Simplex (Todd) | |
| Smith | |
| Wright (See Catalog Section for Description) | |



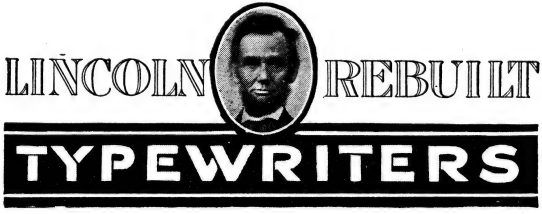
New Era



CRESCENT




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# Combination Registers

There is no basis of valuations for autographic types of combination registers. As with the autographic register units themselves, there is no general market for their disposition. Valuations, therefore, are limited, as a general thing, to specific instances where the purchaser or company making an allowance have an immediate prospective turnover.

The following list affords a basis of valuations for adding machines—cash drawer combination registers. However, the market on such machines is also limited. When the adding machine unit on such combination registers does not differ greatly from a standard model adding machine, or when it can be converted into a standard model by taking off the special features with which it is equipped or to do cash register work, the valuation is usually the same as for a model of adding machine of like capacity and construction.

But for such machines as have the printing section equipped to print letter characters instead of numerals, or those on which the keyboard is permanently split, or when several rows of keys have been eliminated, divided by the keyboard into two sections for the imprinting of symbols and amounts, the valuation is usually considerably less than the valuation as shown elsewhere herein, for adding machines of like capacity and construction.

Despite the fact that adding machines, used with combination registers, have equipment and features in addition to that supplied with the ordinary adding machine models, their value is no more than a regular type of machine, and, in most cases, is less, for the reason that the changes and additional equipment are, in many cases, of a permanent nature not suitable for the use of the full capacity of the machine for straight adding machine work.

The market is also limited, inasmuch as the original sale of a combination register is usually made to conform to the needs or systems of the individual user, and while possible of changing to suit another line of business, the used machine dealer is not prepared to bring out the applied uses of combination registers in the same way as the original salesman. The result is that the same sales effort is not put behind their resale, and the dealer prefers to take the line of least resistance in its turnover by removing the adding machine unit, converting it into a straight adding machine and scrap the cash drawer.

It will, therefore, be seen that valuations depend largely on how readily the adding machine unit may be converted to perform straight adding machine work. In some instances, (and the number seems to be increasing) a higher valuation, more in keeping with the original price of such equipment, is made when there is a possibility of immediately reselling the entire combination instead of placing it in stock.

**Note:** On machines marked *, the equipment on the adding machine unit to adapt it to cash register work, is removable. They may be converted into straight adding machines, if desired, without impairing their adding or totaling capacity.

**Valuations**

***American Combination Register:** listing model, (bearing the American Can Company's label).....$25.00 to $40.00

***Add-Index:** lever set type, listing model; same machine as above but with Add-Index label..... 25.00 to 40.00

***American Calculator Combination;** non-listing model..... 15.00 to 25.00

**Add-Index:** button keyboard models.....Valuations are approximately the same as for Add-Index regular model adding machines of like capacities.

## COMBINATION REGISTERS—continued

**Add-Index Secretary**.....Valuations for the adding machine unit are approximately the same as for Add-Index regular model adding machines of like capacities. A sufficient number of the Secretary models have not reached the market to afford a definite basis of valuation.

**Automatic Bookkeeping Register**.....No basis of valuation

**Certigraph**.....No basis of valuation

***Dalton**.....Valuations are approximately the same as for Little Giant Super Model adding machines of like capacities.

***McCaskey:** Models B-3 and BB-3.....$40 to $60.00
Other models, having symbol-printing columns, both on the keyboard and in the printer, take valuations somewhat less than the above.

**Morris Cash and Credit Register**.....$10.00 to $20.00

**Sundstrand:** Two-row and three-row character printing models. Valuations are approximately the same as for Sundstrand regular model adding machines of like capacities. While the slideboard for setting up symbols is a permanent feature, it does not affect the listing or totaling capacity of the machine.
Cash and Carry (XX) models.....$40.00 to $60.00

**Wales**.....Valuations are approximately the same as for Wales Portable model adding machines of like capacities.


# Our Geographical Position

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***Cash Registers—Typewriters—Office Furniture***

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## WILE COMPANY

**72 North Street**

**ROCHESTER, N. Y.**

# Dictating Equipment

## EDIPHONE

Made by the Ediphone Company, Orange, N. J.

| Dictating or Transcribing Machines | Valuation |
|---|---|
| With wooden cabinet | $ 5.00 |
| With metal cabinet, direct current motor | 15.00 |
| With metal cabinet, alternating current | 15.00 |
| With metal cabinet, Universal motor | 20.00 |
| With metal cabinet, Universal motor and flexible mandrel | 20.00 @ 25.00 |
| **Shaving Machines** | |
| Hand operated | 10.00 |
| Electrically operated | 10.00 @ 15.00 |

## DICTAPHONE

Made by the Dictaphone Company, New York City.

| Dictating or Transcribing Machines | Valuation |
|---|---|
| With metal cabinet, direct current motor | 15.00 |
| With metal cabinet, alternating current | 15.00 |
| With metal cabinet, Universal motor | 20.00 |
| With metal cabinet, Universal motor and flexible mandrel | 20.00 @ 25.00 |
| **Shaving Machines** | |
| Electrically operated | 10.00 @ 15.00 |

Office Economies Company

440 South Dearborn Street

Chicago

**Rebuilt**

*Dictaphones*
*Ediphones*
*Multigraphs*
*Mimeographs*
*Addressing Machines*

**General Agents**

*Standard Envelope Sealers*
*Stamp Affixers,*
*and*
*Postal Permit Printers*
*and*
*Sealers*

# Duplicating Machines

## DITTO

| Made by Ditto, Incorporated, Chicago, Illinois. | Valuation |
|---|---|
| Model No. 1 | $20.00 |
| Model No. 2 | 25.00 |
| Model No. 4 | 30.00 |
| Stands | 5.00 |

## MIMEOGRAPH

Made by the A. B. Dick Company, Chicago, Illinois.

| Model | Description | Valuation |
|---|---|---|
| 75 | Hand inked | $ 5.00 |
| 76 | Fountain inked (See Catalog Section for Description) | 10.00 @ 20.00 |
| 77 | Serials below 3200, without automatic print recorder | 15.00 |
| | 3201 to 16,000, with automatic print recorder | 15.00 @ 25.00 |
| | 16,001 and over, with automatic print recorder and ball-bearing platen | 20.00 @ 30.00 |
| 78 | Serials below 1100 (old style feed board) | 20.00 @ 25.00 |
| | 1101 to 2726 (improved feed board) | 25.00 @ 30.00 |
| | 2726 to 17,000, same as above with ball-bearing platen. | 30.00 @ 40.00 |
| 79 | (See Catalog Section for Description) | 25.00 @ 30.00 |
| 80 | (See Catalog Section for Description) | 25.00 @ 30.00 |
| | Power equipment (stand and motor) | 20.00 @ 25.00 |

## MULTICOLOR PRESS

Valuations for used Multicolor presses are difficult to make except by actual individual appraisal. The variations of the amount of use that each machine receives, makes anything like a standardized valuation impossible. The following table is given to show the comparative age of machines sold. In making valuations or appraisals, the user should be guided by the new prices as shown in the Catalog Section.

### Dates of Manufacture

**(Serial numbers are approximate)**

| Model | Serial | Year Made | Model | Serial | Year Made |
|---|---|---|---|---|---|
| Black | Up to 6900 | 1917 | Victory 1st | 7338 to 8405 | Late 1921 |
| Liberty | 6901 to 7338 | 1918 | Victory 2d | 8406 to 9570 | 1922 |
| | | | Victory E, present model | above 9571 | Feb., 1923 |

## NEOSTYLE

| Made by the A. B. Dick Company, Chicago, Illinois. | Valuation |
|---|---|
| No. 8-F (See Catalog Section for Description) with automatic inking device | $15.00 |
| No. 7 Similar to No. 8 but without automatic inking device | 7.50 |

## MISCELLANEOUS DUPLICATORS

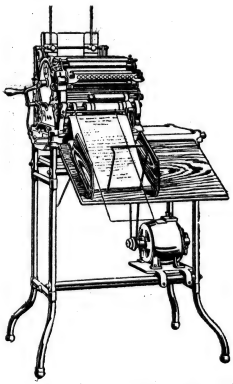
| | Valuation |
|---|---|
| Rotospeed | $10.00 |
| Heyer (with gelatin roll film) | 5.00 |
| Speedograph | 10.00 |
| Polyprint | 5.00 @ 10.00 |
| Underwood | 5.00 |

*Buy Your Rebuilt*

# MULTIGRAPH

*Direct from the Maker*

The only worthwhile guarantee is the guarantee backed by the long established company with plenty of resources.



Every Rebuilt Multigraph bought through any Office of this Company has been completely rebuilt — not simply overhauled — and has new type and new wearing parts. It bears the same strong guarantee as do the new machines.

A specially - equipped factory, manned by experts, is maintained exclusively for the rebuilding of Multigraphs. Its products are correct in every detail, from the interior bushings to the outside enamel.

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**Factory and General Offices—Cleveland, Ohio**
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**Direct Factory Branches in 110 United States and Canadian Cities**

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## MULTIGRAPH AND AUXILIARY EQUIPMENT

* Denotes current models. For description, illustrations and list prices, see catalog section.

Model No. 2, combination printer and typesetter, has been discontinued and was replaced by Model No. 4. It printed through a ribbon only; did not have paper ejectors.

Model No. 3 printer, has been discontinued and is replaced by Model No. 36. It did not have a platen release.

Model No. 40 Junior printer, has been discontinued and is replaced by Model No. 60, to which it was similar.

Model No. 39, Flexo typesetter, has been discontinued and is replaced by Model No. 59, to which it was similar.

Model Numbers Appear: On Models 3, 36 and 46, on front of base or top castings.

On Models 4, 10, 40 and 60, at bottom of right side frame casting.

Serial Numbers Appear: On Models 3, 4, 36 and 46 on lower or left side of base casting.

On Models 40 and 60, on right frame in grooved circle.

On Model 10 on rear center strut of base casting.

### Printers

| Model | Description | Year First Sold | Valuation |
|---|---|---|---|
| 1 | Combination Printer and Type-Setter (type straddled rails) | 1904 | None |
| 2 | Combination Printer and Type-Setter, and one solid drum | 1907 | $10.00 |
| 3 | Printer only, and one segmental drum | 1910 | 15.00 |
| *4 | Combination Printer and Type-Setter, and one solid drum | 1910 | 35.00 |
| *36 | Senior Printer, and one solid drum | 1914 | 50.00 |
| | Senior Printer, and one segmental drum | 1914 | 55.00 |
| *46 | Senior Wide Printer, and one segmental drum | 1914 | 57.50 |
| 40 | Junior Printer, and one segmental drum | 1914 | 12.50 |
| *60 | Junior Printer, and one segmental drum | 1922 | 15.00 |

### Composing Equipment

| Model | Description | Year First Sold | Valuation |
|---|---|---|---|
| 10 | Compotype Typesetter with type | 1910 | $ 2.50 |
| 39 | Flexo Typesetter with type and forks | 1912 | 5.00 |
| *59 | Flexo Typesetter with type and forks | 1922 | 5.00 |

### Attachments

| | | |
|---|---|---|
| *24 | Signature Device | $ 5.00 |
| *15 | Automatic Feed | 5.00 |
| *22 | Two-roll Printers' Ink Attachment | None |
| *18 | Seven-roll Printers' Ink Attachment | 7.50 |
| *14 | Motor Drive (belt) with Stand | 14.00 |
| | Motor Drive (gear) with Stand | None |
| *6 | Removable Drums (Segments) any style | 3.00 |
| | Solid Drums, any style | 2.50 |
| *8 | Stands for any model | 1.50 |

# Scales

There is no basis of definite valuations for used computing scales. Each manufacturing company has a different standard under which machines of their own or other makes are traded. A common practice for years among a great many companies, has been to make a fixed allowance of $50.00 for any kind or type of computing scale, which in practically every case, was decidedly more than the actual value of the scale.

The second hand dealer market is very limited and is unreliable in the extreme. Prices are not quoted except in specific instances and are always subject to immediate acceptance.



# Bookkeeping Machines

There is no basis of valuation for used bookkeeping equipment. This arises fro mthe fact that to be resold, a special knowledge of the application of the machine to the prospects business, is required. This is something which the average ading machine dealer is not competent, nor disposed, to do. Companies trading in bookkeeping equipment of makes other than their own, on orders for new machines, usually quote a modest valuatin or allowance.

The depreciation on used bookkeeping equipment is, therefore, tremendous as compared to its price new, and unless sold to another user or to a dealer having an immediate prospect of turn-over, nothing like the same percentage of valuation as compared to the new price, such as enjoyed by other equipment, need be expected.

**While every effort has been made to include every machine of American manufacture and those having organized representation in the United States, and great care has been exercised to check the correctness and completeness of all descriptions and data contained herein, the publishers do not assume responsibility for errors of omission or commission. All serial numbers, dates, etc., whether specifically so noted or not, must be understood to be approximate.**

*Manufacturers' Typewriter Clearing House*

is the name of a corporation in Chicago having men at its head who understand the dealer's needs, and not only **INVITE** business, but **APPRECIATE** it.

# Typewriters

Standard and Portable

## LOCATION OF SERIAL NUMBERS

**Corona:**
On inside of rear frame, at bottom, center.

**Hammond:**
Old style, under right ribbon spool. Model No. 12 and Multiplex, on left back end of machine over left rear rubber foot.

**Monarch:**
On the top plate under right end of carriage.

**Noiseless:**
Standard size: On plate, right side, top, under right end of carriage.
Portable size: On outside of rear frame, at bottom, center.

**Oliver:**
Models No. 1, 2 and 3, on top of base casting under back of right key lever section to right of center of machine; also on span rod right end on back of carriage.

Models No. 5, 7, 9 and 11, on left of base forward of tension spring under carriage rear. Also on carriage as on Model No. 3.

**Remington:**
Standard size: On top plate right side under end of carriage.
Portable size: On inside of right side frame, toward front.

**Royal:**
On top plate, right side rear, under the carriage.

**L. C. Smith:**
Models No. 1, 2 and 3, on the front cross bar just in back of front panel right end.

Models No. 4, 5, 6, 7, and 8, on the front cross bar in the mechanism behind panel to the rear of keyboard right end.

**Smith Premier:**
On the top plate under right end of carriage.

**Underwood:**
Standard models: On the top right side casting just forward of the "U" shaped design in the casting. The model number is stamped on the panel inside of the forward end of this "U" shape section, being what would appear a continuation of the serial number.

Portable model: On right front flange or leg by which the machine is fastened to base board of case.

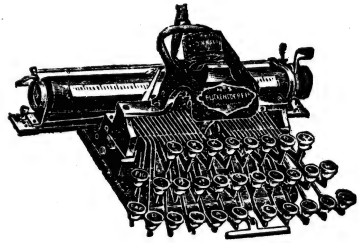
**A Neutral Source of Supply**

We do not sell typewriters, either wholesale or retail, therefore we are not your competitor. We specialize in parts and supplies for dealers.

**AMES SUPPLY CO.** 564-72 W. Randolph St. Chicago

## BLICKENSDERFER

Made by the Blickensderfer Manufacturing Company, Stamford, Connecticut.



**Early models** were type wheel principle machines, printing from an ink pad; three row keyboards.

**Model No. 90** was a front stroke, three row keyboard, visible writing typebar machine. It has been improved by L. R. Roberts Manufacturing Company and is now known as the "Roberts Ninety". (For description see catalog section.)

**Blick-Bar.** This model was also a standard size, four row keyboard, front stroke machine, first marketed in 1913. In 1920 a very few machines were made by the Harry A. Smith Typewriter Company, Elkhart, Indiana, under their name as Model No. 10. (A complete description of the Harry A. Smith typewriter is elsewhere in this section.)

### Valuations

Valuations are not generally quoted. The valuations shown should be understood to represent limited quotations only.

| Model | Valuation |
|---|---|
| **No. 5,** portable, visible printing, interchangeable type wheel | $3.00 |
| **No. 6,** featherweight model, aluminum frame, equipped with back spacer and tabulator | 5.00 |
| **No. 7,** portable | 5.00 |
| **No. 8,** equipped with extended front frame, tabulator | 5.00 |
| **No. 9,** similar to Model No. 8 | 5.00 |
| **Electric Models** | None |
| **Model No. 90,** front stroke, typebar model | $5.00 |

## CENTURY NO. 10

For description and illustration, see Catalog Section.
**Valuation** (not generally quoted) ..... $5.00



**Send Us Your Platens**

*29 Service Stations*
*24 Hour Service*

**AMERICAN WRITING MACHINE CO.**

**See Adv. Page 609**

# CORONA

## Construction

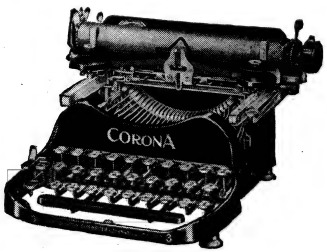
(Serial numbers are approximate)

| | Model | Serial | Date |
|---|---|---|---|
| Capital shift on left, figure shift on right | Standard No. 1 | 1 | 1906 |
| Capital and figure shifts on left side. | Standard No. 2 | 5,571 | July 1910 |
| With pivot bearing type bars, began.. | Corona No. 3 | 20,000 | Feb. 1912 |
| With ball bearing type bars, began.. | Corona No. 3 | 33,001 | Aug. 1913 |
| With solid segment, began..... | Corona No. 3 | 50,234 | Jan. 1915 |
| Improved Model, began..... | Corona No. 3 | 70,000 | Dec. 1915 |
| With new ribbon feed, began..... | Corona No. 3 | 120,000 | July 1917 |
| Light-folding arm, adopted..... | Corona No. 3 | 247,000 | late 1919 |
| Original folding arm re-adopted..... | Corona No. 3 | 295,000 | late 1920 |
| New Model (not numbered)..... | | 500,000 | Oct. 1922 |

## Valuations

* Denotes models of present line. For descriptions and illustration see Catalog Section.

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **Standard No. 1**..... | $10.00 | $ 5.00 | $ 7.50 |
| **Standard No. 2**..... | 10.00 | 5.00 | 7.50 |
| **Corona No. 3:** | | | |
| Serials No. 20,001 to 70,000..... | 15.00 | 7.50 | 10.75 |
| 70,001 to 175,000..... | 15.00 | 7.50 | 11.25 |
| 175,001 to 300,000..... | 15.00 | 7.50 | 12.75 |
| 300,001 to 500,000..... | 20.00 | 12.50 | 16.50 |
| ***Corona No. 4** (not numbered): | | | |
| Serials No. 500,001 and above..... | 20.00 | 17.50 | 19.50 |





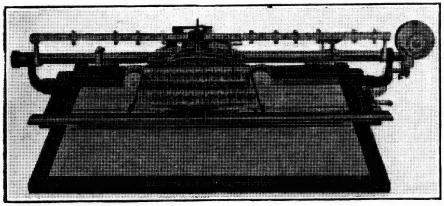

# DEMOUNTABLE

For description and illustration, see Catalog Section.

**Valuation** (not generally quoted) .....$25.00

Dealers
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TYPEWRITERS — ADDING MACHINES — CHECK WRITERS
*Manufacturers' Typewriter Clearing House*
*193 North Dearborn Street, Chicago.*

## ELLIOTT-HATCH



A forerunner of the present Elliott - Fisher typewriter. A single shift book typewriter with a flat platen underneath the writing mechanism, designed for writing in books or on flat sheets. It was made in a number of different models. **Valuation** (not generally quoted) .....$5.00

## FOX

Made by the Fox Typewriter Company, Grand Rapids, Michigan. First visible models placed on the market in 1906. Model No. 23 dates from 1908 and Model No. 24 from 1912. The Fox typewriter was also known in some localities as the Rapid.

**Visible Models:** Had four row keyboard, 44 keys writing 88 characters, front stroke, platen shift, equipped with two-color ribbon, single or ten-key decimal tabulator, back spacer, variable line spacer, right and left hand line space lever; 10½-inch carriage writing line 9 inches long.

**No. 1 or Baby Portable,** was a three row, visible writing machine, having a folding carriage similar to the Corona. It was replaced in a short time by the

**Sterling Portable:** A 7-pound basket shift, three-row keyboard, front stroke, visible writing machine having a 9½-inch carriage, two-color ribbon, left hand shift keys and back spacer. Frame was aluminum. Retail selling price $50.00. Manufacture discontinued.







### Valuations

| Model | High | Low | Average |
|---|---|---|---|
| **Blind Writers** .. | None | None | None |
| Models No. 23 or 24 (visible) Fox or Rapid. | $10.50 | $5.00 | $6.00 |
| Models No. 25, 26, 27 or 28 (visible) wide carriage .... | 7.50 | 5.00 | 5.50 |
| **Portables:** | | | |
| No. 1 or Baby Model ..... | 7.50 | 5.00 | 5.50 |
| Sterling ..... | 7.50 | 5.00 | 5.50 |

## FEDERAL




A front stroke four row keyboard, visible writing machine. Announced in 1919 by the Federal Adding Machine Corporation, New York City. It was the successor of a previous machine known as the Visigraph. Manufacture discontinued.

**Valuation** (not generally quoted) .....$5.00

## GARBELL

A portable, double shift, 3-row keyboard, visible writing machine, manufactured for a short time by the Garbell Typewriter Company, Chicago, Illinois. Production now discontinued. It was a thrust-stroke machine, having a gear-driven, reciprocating typebar action, two-color ribbon, back spacer, right and left hand shift keys, interchangeable carriage. Weight, 5½ pounds in traveling case; height 4 inches.

**Valuations**.....Not generally quoted

## GOURLAND

Made by the Gourland Typewriter Company, Brooklyn, New York. Sold through dealers and agents. It is understood that production is at the present time temporarily suspended.

Single shift, front stroke, four row keyboard having 42 keys writing 84 characters; visible writing.

Constructed on the unit principle, having (1) main frame and printing mechanism, (2) carriage, (3) top plate and ribbon movement, (4) outer frame. Type bars are removable; equipped with right and left hand shift keys; left hand shift lock; back spacer; single key tabulator; combined paper fingers and margin stops. Two-color, ½-inch ribbon. Sold for $60.00. **Valuation** (not generally quoted).....$5.00

## HAMMOND

See description and illustrations in Catalog Section.

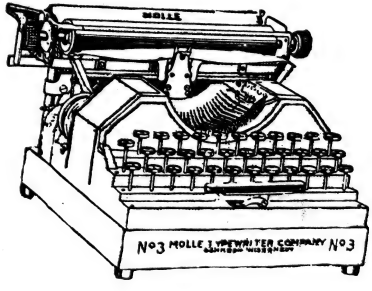
### Valuations

| | High | Low | Average |
|---|---|---|---|
| Serials 87,001 to 88,000, any model ..... | None | None | None |
| 150,001 and above..... | 12.50 | 5.00 | 8.25 |
| 150,001 anud above..... | 12.50 | 5.00 | 8.25 |
| **Multiplex,** any serial ..... | 15.00 | 10.00 | 13.75 |
| **Portable** (folding or non-folding)..... | 15.00 | 10.00 | 13.25 |

## HARRIS

See Rex.

## MOLLE



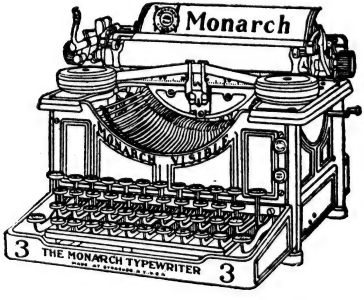

A front stroke, three-row keyboard, visible writing machine. Made for a time by the Molle Typewriter Corporation, Oshkosh, Wisconsin. Manufacture discontinued. It was a lightweight machine, built on the unit principle, basket shift, having one-color ribbon, right and left hand shift keys and weighed 11¾ pounds. Retail price was $50.00.

**Valuation**..Not gnerally quoted.

## HOOVEN AUTOMATIC

See Duplicating Machines.

## MONARCH




### Construction

Made and sold by the Remington Typewriter Company. General offices 374 Broadway, New York City. The machine is not now in production, having been succeeded by the Smith Premier Model No. 30, which in turn has been succeeded by the Smith Premier Model No. 60. Was first put on the market in 1904. A single (basket) shift, four-row keyboard machine; with typebars mounted on individual hangers. Contained all essential standard improvements and enjoyed considerable popularity.

### Dates of Manufacture

Straight Numbers

| Year | *Serial | Year | *Serial |
|---|---|---|---|
| 1906 | 6,345 | 1912 | 78,075 |
| 1908 | 25,972 | 1914 | 110,699 |
| 1910 | 48,836 | Last straight number | 120,000 |

*Serial numbers shown represent the approximate first serial for each year.

**Code Numbers**

Code numbers began in August, 1914, and follow the same system as the Remington Typewriter Company's code. For complete explanation see Remington typewriter data in this section.

### Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A

## MONARCH—continued

deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 1, 2 or 3** | | | |
| **Straight Numbers** | | | |
| Serials ——— to 111,000 | $10.00 | $ 5.00 | $ 7.00 |
| No. 111,001 and above | 17.50 | 10.00 | 12.00 |
| **Code Numbers** | | | |
| With Two Letter Prefix. | | | |
| Serials No. 40,001 to 49,999 | 17.50 | 10.00 | 12.00 |
| 50,001 to 59,999 | 17.50 | 10.00 | 13.25 |
| 60,001 to 69,999 | 20.00 | 12.50 | 15.50 |
| 70,001 to 79,999 | 25.00 | 17.50 | 21.25 |
| 80,001 to 89,999 | 30.00 | 22.50 | 26.25 |
| 90,001 to 99,999 | 30.00 | 22.50 | 27.00 |
| 00,001 to 40,000 | 35.00 | 27.50 | 31.25 |

## NATIONAL PORTABLE

For description and illustration see Catalog Section.

| | High | Low | Average |
|---|---|---|---|
| **Valuations** | $10.00 | $ 5.00 | $ 6.00 |

## NOISELESS

### Construction

(Serial numbers are approximate)

| Model | Description | Serial |
|---|---|---|
| **No. 4** | One-color ribbon, right and left capital shift keys; left (only) figure shift | 12,300 |
| **No. 5** | Right and left hand figure shift keys, began February, 1922 | 60,000 |

Two-color ribbon as standard equipment, began with Model 5, but a two-color ribbon attachment can be supplied with any model regardless of its age.

### Dates of Manufacture

| Year | Serial | Year | Serial | Year | Serial | Year | Serial |
|---|---|---|---|---|---|---|---|
| 1916 | 11,000 | 1918 | 17,000 | 1920 | 35,000 | 1922 | 58,000 |
| 1917 | 13,000 | 1919 | 24,000 | 1921 | 51,000 | 1923 | 68,000 |

### Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

*Denotes models of present line. For descriptions and illustrations see Catalog Section.

## NOISELESS—continued

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 1**—Serials to 5,000 | $15.00 | $10.00 | $11.25 |
| **No. 3**— 5,001 to 12,300 | 15.00 | 10.00 | 12.00 |
| **No. 4**—84 characters, regular carriage, | | | |
| Serials No. 12,301 to 15,000 | 25.00 | 10.00 | 14.50 |
| 15,001 to 22,000 | 25.00 | 7.50 | 13.50 |
| 22,001 to 25,000 | 30.00 | 7.50 | 14.50 |
| 25,001 to 30,000 | 30.00 | 10.00 | 15.00 |
| 30,001 to 35,000 | 30.00 | 15.00 | 19.50 |
| 45,001 to 48,000 | 35.00 | 15.00 | 20.75 |
| 48,001 to 50,000 | 45.00 | 15.00 | 22.50 |
| 50,001 to 55,000 | 45.00 | 25.00 | 35.00 |
| 55,001 to 60,000 | 55.00 | 25.00 | 38.25 |
| 60,001 and above | 55.00 | 25.00 | 35.00 |
| **No. 5**—90 characters, regular carriage, any serial | 55.00 | 30.00 | 35.00 |
| ***Portable** | 25.00 | 10.00 | 15.00 |

## OLIVER

### Construction and Dates of Manufacture

(Serial numbers are approximate)

| Model | Description | First Placed on Market | Serials From | To |
|---|---|---|---|---|
| **1**— | | 1896 | 1 | 5,000 |
| **2**—Improved paper feed | | 1898 | 5,000 | 35,000 |
| **3**—Larger and heavier model, one color ribbon; no back spacer | | 1901 | 35,000 | 183,000 |
| **5**—First machines were similar to Model No. 3, but had enclosed base. Back spacer and tabulator at serial 282,000 | | 1907 | 183,000 | 494,000 |
| **7**—Similar to Model No. 5, with left margin release key changed to right side of keyboard | | 1914 | 494,000 | 551,000 |
| **9**—First model having right and left hand shift keys and two-color ribbon | | 1915 | 551,000 | 1,000,000 |
| **11**—Quiet Speedster Model | | 1922 | Over 1,000,000 | |

**A New Service For Typewriter Dealers**

When you buy roughs, order them shipped to us. We take down and thoroughly clean each machine, renew all worn, missing or damaged parts, including platen, type, screws, etc., renickel all bright parts, and reship the machine to you, complete. You do your own assembling and aligning, adjusting, etc.

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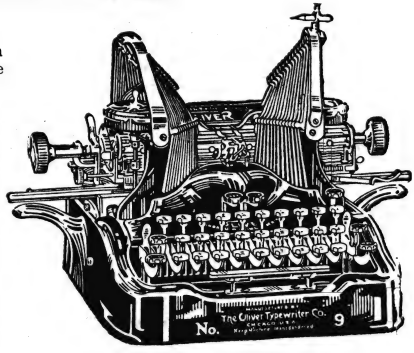
## OLIVER—continued

### Valuations

(For machines equipped with regular correspondence size carriages.)

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

*Denotes models of present line. For description and illustration see Catalog Section.




| Model | | Valuation High | Low | Average |
|---|---|---|---|---|
| **No. 1—** | | None | None | None |
| **No. 2—** | | None | None | None |
| **No. 3—** | Serials No. 35,000 to 182,999 | $ 5.00 | $ 5.00 | $ 5.00 |
| **No. 5—** | 183,000 to 493,999 | 10.00 | 5.00 | 7.50 |
| **No. 7—** | 494,000 to 550,999 | 10.00 | 7.50 | 8.90 |
| **No. 9—** | 551,000 to 999,999 | 15.00 | 10.00 | 12.50 |
| ***No. 11—** | Over 1,000,000 | 15.00 | 15.00 | 15.00 |

## PORTEX

See "National Portable."

## RAPID

See Fox.

## REMINGTON

### Construction

(Serial numbers are approximate)

Variable line spacer.....On Model No. 6 begins at serial 138,000
Variable line spacer.....On Model No. 7 begins at serial 170,000
Carriage geared controller.....On Visible Models begins at serial 300,000
Stationary ribbon on spacing.....On Visible Models begins at serial 382,000
"L" construction (improved segment and typebars) begins in..... 1919
Straight serials (not coded) on visible models end at serial..... 440,000
Code numbers, begin.....August, 1919
Improved No. 10 (incorporating improvements in carriage escapement, typebar mechanism and ribbon mechanism) begin.....January, 1921

## REMINGTON—continued

### Dates of Manufacture

Straight Numbers

| Placed on market Year | Model No. 6 *Serial | Model No. 7 *Serial | Model No. 8 *Serial | Model No. 9 *Serial | Model No. 10 *Serial | Model No. 11 *Serial | Model No. 12 *Serial |
|---|---|---|---|---|---|---|---|
| 1894 | 1 | | | | | | |
| 1896 | 19,200 | 1 | | | | | |
| 1898 | 38,000 | 19,000 | 200 | | | | |
| 1900 | 59,100 | 50,200 | 600 | | | | |
| 1902 | 84,000 | 89,000 | 12,300 | | | | |
| 1904 | 116,000 | 141,000 | 21,000 | 2,000 | | | |
| 1906 | 144,500 | 181,000 | 28,400 | 7,500 | | | |
| 1908 | 170,000 | 232,100 | 38,150 | 15,000 | | | |
| 1910 | 177,100 | 244,250 | 40,700 | 16,870 | 75,000 | | |
| 1912 | 179,900 | 247,300 | 41,680 | 16,960 | | 216,000 | |
| 1914 | 181,069 | 248,355 | 41,287 | 17,149 | | 383,000 | |

*Serial numbers shown represent the approximate first serial for each year.

#### Code Numbers

All Remington machines marketed since August, 1914, are numbered with two code letters and a serial number. The code letters are always prefixed to the serial number.

**The first prefix letter** indicates the kind of machine, such as:

"R" on Remington to distinguish the number from numbers on Monarch and Smith Premier typewriters sold by the same company.

"L" denotes a Remington machine of "L" construction (improved segment and typebars).

**The second prefix letter** denotes the month in which the machine was manufactured.

**One prefix letter** before serial number, denotes that the machine has been rebuilt.

In code numbering machines, a series of 10,000 serial numbers is used over and over again as often as is necessary during the year. The prefix letter indicating the month of manufacture, of course, varies. The following table shows the years in which the different groups of serial numbers were used:

Code Serial Groups

| Year | Serials | Year | Serials |
|---|---|---|---|
| 1914 | 40,001 to 49,999 | 1919 | 90,000 to 99,999 |
| 1915 | 50,001 to 59,999 | 1920 | 00,001 to 9,999 |
| 1916 | 60,001 to 69,999 | 1921 | 10,001 to 19,000 |
| 1917 | 70,001 to 79,999 | 1922 | 20,001 to 29,999 |
| 1918 | 80,001 to 89,999 | 1923 | 30,001 to 39,999 |

**Example:** RV-93257 denotes a Remington machine manufactured in August, 1919. The same number may occur twelve times in the same year, but with twelve different changes in the second letter of the prefix.

# INVINCIBLE TYPEWRITERS

That Will Interest the Dealer or Any Buyer

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***Save Time, Transportation Annoyance and Send Your Platens to the Nearest Station***

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BALTIMORE, 16-18 Park Avenue
BOSTON, 119 Franklin Street
BUFFALO, 117 Franklin Street
CHICAGO, 329 S. Dearborn Street
CHICAGO, 119 N. Clark Street
CINCINNATI, 148 E. Fourth Street
CLEVELAND, 34 Euclid Arcade
DALLAS, 1503 Commerce Street
DENVER, 1723 Champa Street
DETROIT, 1253 Griswold Street
INDIANAPOLIS, 30 S. Penna Street.
KANSAS CITY, 905 Grand Avenue
LOS ANGELES, 732 S. Spring Street
MILWAUKEE, 127 Second Street
MINNEAPOLIS, 724 Marquette Ave.
NEWARK, 449-455 Central Avenue
NEWARK, 34 Clinton Street
NEW ORLEANS, 345 Baronne Street
NEW YORK, 321 Broadway
NEW YORK CITY, 20 E. 23rd St.
NEW YORK CITY, 569 Melrose Av.
OAKLAND, CAL. 334 Twelfth Street
PHILADELPHIA, 1209 Arch Street
PITTSBURGH, 630 Penn Avenue
SAN DIEGO, 909 Third Street
SAN FRANCISCO, 506 Market Street
ST. LOUIS, 807 Pine Street
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## American Writing Machine Company

**Established 1880**

***Executive Offices and Factory***

**449-455 Central Avenue** **Newark, N. J.**

# Platens

are not bought from me just because of personality.

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## There's a Reason—

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PLATENS RECOVERED and PLATEN SHELLS
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TYPEWRITERS, ADDING MACHINES, MULTIGRAPH, MULTICOLOR PRESS, DUPLICATING MACHINES

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RUBBER ROLLS OF EVERY DESCRIPTION

## Alexander G. Hug

128 North La Salle Street CHICAGO

## REMINGTON—continued

### Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

*Denotes models of present line. For descriptions and illustrations see Catalog Section.

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 2**—About the earliest practical double shift, blind writer, regular carriage | None | None | None |
| **No. 3**—Wide carriage model of No. 2 | None | None | None |
| **No. 4**—Writes capitals only | None | None | None |
| **No. 5**—Similar to No. 3 | None | None | None |
| **No. 6**—Blind writer similar to No. 2, wide carriage. | $10.00 | $ 3.00 | $ 5.00 |
| **No. 7**—Blind writer, wide carriage; tabulator | 10.00 | 3.00 | 5.00 |
| **No. 8**—Blind writer, extra wide carriage | 10.00 | 3.00 | 5.00 |
| **No. 9**—Blind writer, regular carriage, with decimal tabulator | 10.00 | 5.00 | 7.50 |
| **No. 10 or *No. 11** | | | |
| **Straight Numbers** | | | |
| Serials No. to 138,000 | 10.00 | 5.00 | 8.60 |
| 138,000 to 216,000 | 10.00 | 7.50 | 9.50 |
| 216,001 to 300,000 | 12.50 | 7.50 | 10.00 |
| 300,001 to 385,000 | 15.00 | 7.50 | 10.50 |
| 385,001 and above | 15.00 | 10.00 | 11.50 |
| **Code Numbers** | | | |
| With two letter prefix if the first prefix letter is not letter "L": | | | |
| Serials No. 40,001 to 49,999 | 15.00 | 10.00 | 11.50 |
| 50,001 to 59,999 | 17.50 | 10.00 | 13.50 |
| 60,001 to 69,999 | 20.00 | 12.50 | 17.50 |
| 70,001 to 79,999 | 25.00 | 17.50 | 19.50 |
| 80,001 to 89,999 | 30.00 | 22.50 | 25.00 |
| 90,001 to 99,999 | 35.00 | 27.50 | 31.25 |
| 00,001 to 09,999 | 40.00 | 32.50 | 36.25 |
| 10,001 to 19,999 | 40.00 | 32.50 | 36.25 |
| 20,001 to 29,999 | 40.00 | 32.50 | 36.25 |
| With two letter prefix, first prefix letter always "L" (improved segment and type bars): | | | |
| Serials No. 90,001 to 99,999 | 40.00 | 35.00 | 36.00 |
| 00,001 to 40,000 | 40.00 | 35.00 | 36.00 |
| ***No. 12**—Any serial | 40.00 | 35.00 | 36.75 |
| ***Portable**—Code numbers with two letter prefix: | | | |
| Serials No. 00,001 to 09,999 | 17.50 | 7.50 | 12.75 |
| 10,001 to 19,999 | 20.00 | 12.50 | 15.00 |
| 20,001 and above | 22.50 | 12.50 | 17.85 |
| **Junior**—Any serial | 5.00 | 5.00 | 5.00 |

**Accounting Machines:**
Same valuations as regular Remington typewriter of like serial number.

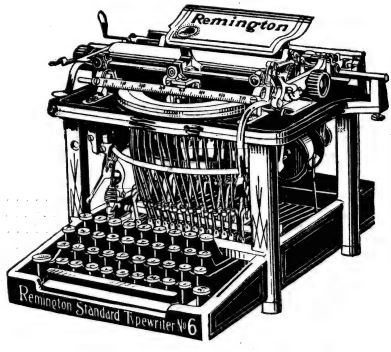
## REMINGTON—continued

**Model No. 2** was the first shift machine, similar to No. 6. Over 100,000 of this model were made and sold.

**Model No. 3** was practically the same machine, except that it was equipped with a wide carriage.

**Model No. 6,** illustrated opposite, enjoyed a popularity that continued for years and thousands of them are still in use. Like other machines previous to the No. 10, the No. 6 was a blind writing machine, that is, the carriage had to be lifted to inspect the work being typed.

**Model No. 10** was discontinued late in 1923.




## REX

A three row, front stroke, visible writing machine. Made from 1916 until recently by the Rex Typewriter Company, Fond du Lac, Wisconsin, and sold extensively until 1922 by the American Can Company, Chicago, Illinois. It had a three row keyboard, two-color ribbon, manually reversed, single key tabulator, back spacer, 11-inch carriage with a removable platen. Model No. 4 was the standard machine; Model No. 4A had two extra keys; Model No. 10 had an improved carriage, the same as is now standard equipment on the Demountable typewriter. Manufacture discontinued. This machine, with very slight changes, was also known as the Harris.

**Valuation** ..... $5.00

## ROBERTS "90"

For description see Catalog Section.

**Valuation** (not generally quoted) ..... $5.00



**Send Us Your Platens**

*29 Service Stations*
*24 Hour Service*

**AMERICAN WRITING MACHINE CO.**

**See Adv. page 609**

# ROYAL

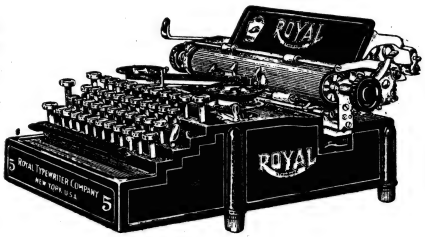
## Construction

**Royal Standard:** A low frame, light weight machine first put on the market in 1906. A single shift, four row keyboard, visible writer without tabulator or back spacer; one color ribbon. Sold for $65.00.

**Royal Grand:** Marketed contemporary with and a heavier and larger machine than the Royal Standard. A single shift, four row keyboard, single key tabulator, back spacer.

**Model No. 5:** Was an improved model of the Royal Standard. Placed on the market in 1911. It had a two-color ribbon, tabulator and back spacer and sold for $75.00.

**Models No. 6 and 7:** Wide carriage models of the Model No. 5.




**Model No. 10:** Commenced at serial 173,000 in 1914. Glass sides as regular equipment on No. 10 began at serial 212,000 in 1915. Variable line spacer began at serial 282,000.

**Quiet Model (QX):** Began at serial 600,000 in 1921.

**Model X-12, X-14, X-16, X-18:** Are Model No. 10 with 12", 14", 16" and 18" carriages respectively. Placed on the market in July, 1922.

## Dates of Manufacture

| Year | *Serial | Year | *Serial | Year | *Serial |
|---|---|---|---|---|---|
| 1906 | 1 | 1913 | 141,000 | 1920 Jan. | 420,000 |
| 1907 | 1,000 | 1914 | 175,000 | 1920 July | 500,000 |
| 1908 | 4,000 | 1915 | 206,000 | 1921 Jan. | 560,000 |
| 1909 | 14,000 | 1916 | 236,000 | 1921 July | 585,000 |
| 1910 | 38,000 | 1917 | 281,000 | 1922 Jan. | 606,000 |
| 1911 | 58,000 | 1918 | 337,000 | 1922 July | 640,000 |
| 1912 | 107,000 | 1919 | 386,000 | 1923 Jan. | 680,000 |
| | | | | 1924 Jan. | 740,000 |

* Serial numbers shown represent the approximate first serial for each year.

## Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

* Denotes models of present line. For descriptions and illustration see Catalog Section.

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **Royal Grand**—Any serial | $ 5.00 | $ 5.00 | $ 5.00 |
| **Royal Standard**—Model No. 1, any serial | 10.00 | 5.00 | 6.75 |
| **Model No. 3**—Wide carriage model of No. 1, any serial | 10.00 | 5.00 | 5.75 |

## ROYAL—continued

### Valuations—continued

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 5**—Regular carriage, Serials No. to 175,000 | $15.00 | $ 7.50 | $11.50 |
| Serials No. 175,001 to 225,000 | 15.00 | 10.00 | 11.75 |
| 225,001 to 300,000 | 17.50 | 10.00 | 13.00 |
| 300,001 and above | 20.00 | 12.50 | 16.75 |
| **No. 6 or 7**—Wide carriage models of No. 5, any serial | 10.00 | 5.00 | 6.50 |
| *__No. 10__—Regular carriage, Serials No. to 200,000 | 20.00 | 15.00 | 17.00 |
| Serials No. 200,001 to 212,000 | 20.00 | 12.50 | 16.25 |
| 212,001 to 225,000 | 25.00 | 12.50 | 19.25 |
| 225,001 to 275,000 | 25.00 | 15.00 | 19.50 |
| 275,001 to 300,000 | 25.00 | 17.50 | 20.25 |
| 300,001 to 350,000 | 30.00 | 20.00 | 23.50 |
| 350,001 to 400,000 | 32.50 | 22.50 | 25.25 |
| 400,001 to 500,000 | 35.00 | 25.00 | 29.50 |
| 500,001 to 550,000 | 37.50 | 27.50 | 32.75 |
| 550,001 to 600,000 | 40.00 | 32.50 | 34.50 |
| 600,001 and above | 40.00 | 35.00 | 37.00 |
| *__Quiet Model__—With Code Letters QX before serial, any serial | 40.00 | 30.00 | 35.00 |
| *__No. X-12, X-14__—12" and 14" carriage models of Model No. 10, Serials No. to 200,000 | 12.50 | 10.00 | 11.00 |
| Serials No. 200,001 to 212,000 | 12.50 | 10.00 | 11.50 |
| 212,001 to 225,000 | 17.50 | 10.00 | 13.50 |
| 225,001 to 250,000 | 17.50 | 10.00 | 14.00 |
| 250,001 to 275,000 | 17.50 | 10.00 | 14.50 |
| 275,001 to 300,000 | 17.50 | 10.00 | 15.00 |
| 300,001 to 350,000 | 22.50 | 17.50 | 19.25 |
| 350,001 to 500,000 | 27.50 | 20.00 | 21.75 |
| 500,001 to 600,000 | 30.00 | 22.50 | 26.25 |
| 600,001 and above | 30.00 | 22.50 | 28.00 |
| *__No. X-18__—18" carriage model of Model No. 10, Serials No. to 212,000 | 12.50 | 10.00 | 11.25 |
| Serials No. 212,001 to 250,000 | 17.50 | 12.50 | 14.50 |
| 250,001 to 275,000 | 17.50 | 12.50 | 15.00 |
| 275,001 to 300,000 | 17.50 | 12.50 | 15.50 |
| 300,001 to 350,000 | 22.50 | 17.50 | 18.75 |
| 350,001 to 500,000 | 27.50 | 20.00 | 22.50 |
| 500,001 to 600,000 | 30.00 | 25.00 | 27.50 |
| 600,001 and above | 30.00 | 30.00 | 30.00 |

Prompt attention—
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The quality and appearance you expect—plus
Skillful, dependable workmanship and appreciation of your patronage!

*Manufacturers' Typewriter Clearing House*
*193 North Dearborn Street,* *Chicago.*

## SHILLING BROS.

Also known as the Pittsburgh Visible. For description see Catalog Section.

**Valuation** (not generally quoted).....$5.00

## L. C. SMITH

### Construction

(Serial numbers are approximate)

Pivot bar to serial 27,000; ball bearing over serial 27,000; back spacer begins at serial 43,000; improved type bar begins at serial 225,000; variable line spacer begins at serial 260,000.

### Dates of Manufacture

| | Model No. 1 | Model No. 2 | Model No. 3-12 | Model No. 3-14 | Model No. 4 | Model No. 5 | Model No. 6 | Model No. 7 | Model No. 8 |
|---|---|---|---|---|---|---|---|---|---|
| Placed on market | 1905 | 1904 | 1921 | 1908 | 1911 | 1911 | | 1915 | 1915 |
| **Year** | ***Serial** | ***Serial** | ***Serial** | ***Serial** | ***Serial** | ***Serial** | ***Serial** | ***Serial** | ***Serial** |
| 1905 | 1 | | | | | | | | |
| 1906 | 1,500 | | | | | | | | |
| 1907 | 3,000 | | | | | | | | |
| 1908 | 4,000 | 27,000 | | | | | | | |
| 1909 | 5,500 | 42,000 | | 1,440 | | | | | |
| 1910 | 7,000 | 55,000 | | 3,300 | | | 1,500 | | |
| 1911 | 10,000 | 69,000 | | 5,750 | | | 1,800 | | |
| 1912 | | 125,000 | | 8,250 | 10,150 | 128,000 | 2,100 | | |
| 1913 | | | | 12,000 | 11,500 | 162,500 | 3,150 | | |
| 1914 | | | | 16,000 | 12,800 | 196,500 | 4,300 | | |
| 1915 | | | | 19,000 | 13,800 | 225,000 | 5,400 | | |
| 1916 | | | | 26,000 | 14,500 | 240,000 | 8,000 | 14,500 | 255,000 |
| 1917 | | | | 30,000 | 15,300 | 250,000 | 10,000 | 15,300 | 280,000 |
| 1918 | | | | 33,500 | | 255,000 | 11,000 | 17,000 | 315,000 |
| 1919 | | | | 38,000 | 18,500 | 260,000 | 13,100 | 18,027 | 335,000 |
| 1920 | | | | 44,500 | | | 14,950 | 18,400 | 355,000 |
| 1921 | | | | 48,000 | | | 15,967 | 19,188 | 370,000 |
| 1922 | | | | 53,000 | | | 17,100 | 19,500 | 416,000 |
| 1923 | | | | 56,000 | | | 18,000 | 20,000 | 440,000 |
| Present serials | | | 8,000 | 60,000 | | | 19,000 | 20,500 | 470,000 |

* Serial numbers shown represent the approximate first serial for each year.

### Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

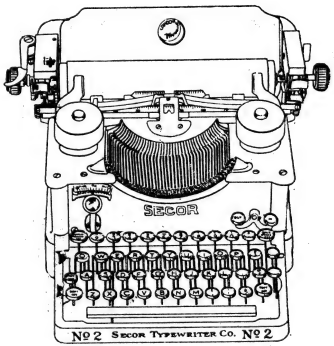
* Denotes models of present line. For descriptions and illustration see Catalog Section.

## L. C. SMITH—continued

### Valuations—continued

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 1**—76 characters, regular carriage. Any serial | $10.00 | $ 5.00 | $ 7.25 |
| **No. 2**—84 characters without type guide, regular carriage. Serials No. to 69,000 | 10.00 | 5.00 | 7.50 |
| Serials No. 69,001 to 100,000 | 12.50 | 5.00 | 8.50 |
| 100,001 and above | 12.50 | 5.00 | 9.00 |
| ***No. 3—12"**—84 characters, 12" carriage model of No. 8. Any serial | 40.00 | 32.50 | 35.65 |
| ***No. 3—14"**—84 characters, 14" carriage model of No. 2 to serial 8,000; No. 5 to serial 25,000; No. 8 over serial 25,000. Serials No. to 8,250 | $15.00 | $ 5.00 | $ 8.25 |
| Serials No. 8,251 to 12,000 | 15.00 | 7.50 | 9.00 |
| 12,001 to 16,000 | 15.00 | 7.50 | 10.50 |
| 16,001 to 19,000 | 15.00 | 10.00 | 12.50 |
| 19,001 to 26,000 | 20.00 | 15.00 | 17.50 |
| 26,001 to 30,375 | 25.00 | 17.50 | 20.00 |
| 30,376 to 33,450 | 30.50 | 20.00 | 22.50 |
| 33,451 to 38,300 | 35.00 | 20.50 | 25.00 |
| 38,301 and above | 40.00 | 25.00 | 27.50 |
| **No. 4**—76 characters, regular carriage. Serials No. to 13,800 | 15.00 | 7.50 | 11.75 |
| Serials No. 13,801 to 14,500 | 17.50 | 10.00 | 13.50 |
| 14,501 to 15,300 | 20.00 | 12.50 | 15.50 |
| 15,301 to 15,500 | 20.00 | 15.00 | 16.25 |
| 15,501 to 17,000 | 22.50 | 15.00 | 16.75 |
| 17,001 to 18,300 | 30.00 | 20.00 | 27.50 |
| 18,301 and above | 32.50 | | 32.50 |
| **No. 5**—84 characters, with type guide, regular carriage. Serials No. to 196,500 | 15.00 | 10.00 | 12.50 |
| 196,501 to 225,000 | 15.00 | 7.50 | 11.75 |
| 225,001 to 240,000 | 20.00 | 12.50 | 17.00 |
| 240,001 to 250,000 | 22.50 | 15.00 | 18.50 |
| 250,001 to 255,500 | 25.00 | 17.50 | 20.00 |
| 255,501 to 260,000 | 27.50 | 20.00 | 22.50 |
| 260,001 and above | 32.50 | | 32.50 |
| **No. 6—16" or 6—18"**—84 characters 16 or 18" carriage models of No. 2 to serial 2,000; No. 5 to serial 8,000; No. 8 over serial 8,000. Serials No. to 4,300 | 15.00 | 7.50 | 10.00 |
| Serials No. 4,301 to 5,400 | 17.50 | 10.00 | 12.50 |
| ***No. 6—20" or 6—26"**—Extra wide carriage models of No. 8: | | | |
| Serials No. 5,401 to 8,000 | 25.00 | 15.00 | 20.00 |
| 8,001 to 10,000 | 25.00 | 20.00 | 22.50 |
| 10,001 to 11,000 | 30.00 | 20.00 | 25.00 |
| 11,001 and above | 37.50 | 25.00 | 30.00 |
| ***No. 7**—76 characters, regular carriage, similar to No. 8. Serials No. to 17,500 | 27.50 | 20.00 | 21.75 |
| 17,501 and above | 37.50 | 25.00 | 28.75 |
| ***No. 8**—84 characters, standard correspondence machine, regular carriage. Serials No. to 280,000 | 25.00 | 20.00 | 21.25 |
| Serials No. 280,001 to 315,000 | 30.00 | 25.00 | 27.50 |
| 315,001 to 335,000 | 35.00 | 32.50 | 33.75 |
| 335,001 to 400,000 | 40.00 | 35.00 | 37.50 |
| 400,001 to 425,000 | 40.00 | 32.50 | 36.50 |
| 425,001 and above | 40.00 | 35.00 | 36.75 |

## SECOR




A four row, single shift, front stroke typewriter, placed on the market in 1911. It had a decimal tabulator, right and left hand shift keys, back spacer and two-color ribbon with automatic reverse. Retail price was $100.00. Manufacture discontinued. **Valuation** (not generally quoted). $5.00

## HARRY A. SMITH

A standard size front stroke, single shift, four row keyboard, visible writing machine, having two color ribbon, 10½-inch carriage on which the platen only was shifted for capitals; rotary escapement; ball bearing typebars having individual hangers.

A very few of these machines were made in 1920 by the Harry A. Smith Typewriter Company, Elkhart, Indiana, which company has since gone out of business. This same machine was marketed until 1917, by the Blickensderfer Manufacturing Company, Stamford, Connecticut, as the Blick-Bar. Valuations are not generally quoted.




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*All Machines Dismantled to Frames Enamel Baked at 275° for Three Hours. Transfers and Varnish at 150 for Two Hours. All Nickel Parts Plated. New Platen and Feed Rolls*

# SMITH PREMIER

## Dates of Manufacture

(Serial numbers are approximate)

**Straight Numbers**

| Placed on market / Year | Model No. 2 1895 Serial | Model No. 4 1896 Serial | Model No. 10 1908 Serial |
|---|---|---|---|
| 1895 | 1 | | |
| 1900 | 38,500 | 17,100 | |
| 1905 | 96,300 | 63,800 | |
| 1910 | 131,131 | 113,800 | 34,600 |
| 1911 | 131,500 | 114,400 | 62,928 |
| 1912 | 131,700 | 114,500 | 94,400 |
| 1913 | 132,000 | 115,000 | 118,700 |
| 1914 | 132,900 | 115,300 | 134,000 |

**Code Numbers**

Code numbers began in August, 1914, and follow the same system as the Remington Typewriter Company's code. For complete explanation, see Remington typewriter data in this section.

## Valuations

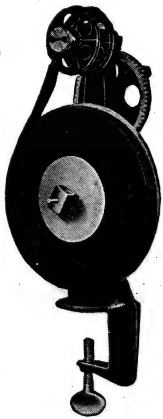
**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

* Denotes models of present line. For descriptions and illustration see Catalog Section.

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 2, 3, 4, 5, 6 or 9**—All blind writing and with double keyboards | $ 5.00 | $ 2.00 | $ 2.50 |
| **No. 10**—84 characters, double keyboard, visible writer, two-color ribbon, back spacer and tabulator. | | | |
| **Straight Numbers** | | | |
| Serials No. to 134,000 | 10.00 | 5.00 | 7.00 |
| 134,000 and above | 20.00 | 5.00 | 10.00 |
| **Code Numbers** | | | |
| With two letter prefix: | | | |
| Serials No. 40,001 to 49,999 | 20.00 | 5.00 | 10.00 |
| 50,001 to 59,999 | 20.00 | 5.00 | 11.00 |
| 60,001 to 79,999 | 15.00 | 7.50 | 12.00 |
| 80,001 to 99,999 | 20.00 | 12.50 | 15.75 |
| 00,001 to 40,000 | 20.00 | 12.50 | 15.75 |
| **No. 30**—84 characters, individual typebar hangers, single shift, four row keyboard. Any serial | 40.00 | 20.00 | 25.00 |
| ***No. 60**—84 characters, single shift, four row keyboard. Any serial | 40.00 | 25.00 | 30.00 |

# Reel-O-Ribbon SERVICE

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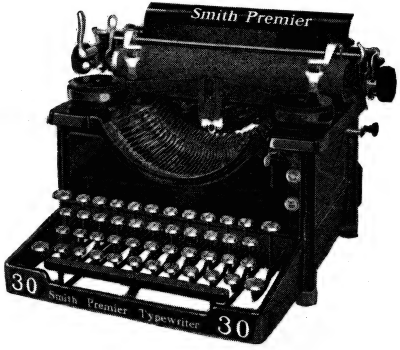
**Manufacturers**
**ROCHESTER, N. Y.**

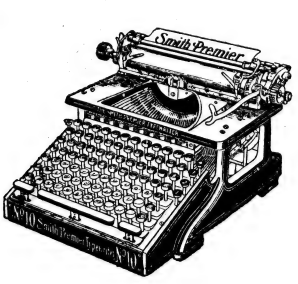
## SMITH PREMIER—continued

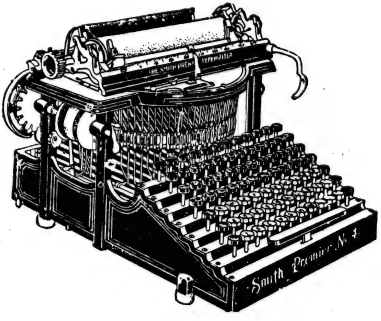
### Valuations—continued

Smith Premier Model No. 30 was announced in 1923 and is the forerunner of the present Model No. 60 (for description of which see Catalog Section). It differs from the Model No. 60 in that it has the individual typebar hangers the same as the Monarch typewriter of which it is an improved successor.

Smith Premier Model No. 60, it will be noted, has the typebars mounted in a solid slotted segment and also incorporates some few other improvements not found in the No. 30.




You can't buy a typewriter in the rough and do the work on it in your own shop at the price we can sell you a rebuilt. That's hard to believe, but a trial order will convince you as it has thousands of other dealers.

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

## STANDARD FOLDING

See Corona.

## STEARNS

A front stroke, single shift, four row keyboard visible writing machine; placed on the market in 1900. Manufacture discontinued.

**Valuation,** (not generally quoted) .....$5.00







## SUN

A three row keyboard, double shift, front stroke machine. Made for years in a number of successive models. The inking is accomplished by a primary and secondary rotating ink pad. Manufacture discontinued.

### Valuations

Model No. 1, 2 or 3.....$2.50
Model No. 6..... 5.00

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# UNDERWOOD

## Construction

(Serial numbers are approximate)

| | Models No. 4 and 5 Serial No. | Models No. 3-12, 3-14, 3-16 Serial No. | Models No. 3-18, 3-20, 3-26 Serial No. |
|---|---|---|---|
| Rack escapement, to | 23,000 | 3,000 | 3,200 |
| Rotary escapement, from | 23,000 | 3,000 | 3,200 |
| Automatic ribbon, reverse, from | 175,000 | 19,300 | 5,900 |
| Two-color ribbon, from | 247,000 | 32,500 | 11,500 |
| Back spacer, from | 247,000 | 32,500 | 11,500 |
| Improved paper feed, from | 260,000 | 35,000 | 6,600 |
| Improved paper guide, from | 394,000 | 56,000 | 11,000 |
| Variable line spacer, from | 700,000 | 125,000 | 18,500 |
| Improved shift lock, from | 758,000 | 160,000 | 28,500 |
| Change in wing scales, from | 1,720,000 | | |
| First Model G, from | 359,000 | 55,600 | 11,500 |
| First Model H, from | 517,000 | 85,500 | 17,500 |
| First Model K, from | 1,600,000 | 390,000 | 85,500 |

## Dates of Manufacture

**Models No. 1 and No. 2**—From 1896 to 1900, highest serials around 12,000.

| Year | Models No. 4 and 5 *Serial | Models No. 3-12, 3-14, 3-16 *Serial | Models No. 3-18, 3-20, 3-26 *Serial |
|---|---|---|---|
| 1900 | 1 | | |
| 1901 | 500 | | |
| 1902 | 8,500 | 900 | |
| 1903 | 22,000 | 1,500 | |
| 1904 | 45,000 | 3,500 | 100 |
| 1905 | 65,000 | 5,200 | 450 |
| 1906 | 100,000 | 9,000 | 1,100 |
| 1907 | 135,000 | 14,000 | 2,100 |
| 1908 | 180,000 | 20,000 | 3,500 |
| 1909 | 227,000 | 28,500 | 5,200 |
| 1910 | 286,000 | 38,000 | 7,300 |
| 1911 | 355,000 | 51,000 | 9,800 |
| 1912 | 443,000 | 67,000 | 13,200 |
| 1913 | 545,000 | 88,000 | 18,750 |
| 1914 | 655,000 | 110,000 | 23,300 |
| 1915 | 740,000 | 128,000 | 27,500 |
| 1916 | 830,000 | 152,000 | 34,000 |
| 1917 | 940,000 | 180,000 | 44,500 |
| 1918 | 1,050,000 | 220,000 | 54,000 |
| 1919 | 1,160,000 | 250,000 | 62,000 |
| 1920—January | 1,280,000 | 282,000 | 67,500 |
| 1920—July | 1,370,000 | 312,000 | 73,000 |
| 1921—January | 1,430,000 | 335,000 | 77,000 |
| 1921—July | 1,480,000 | 355,000 | 80,500 |
| 1922—January | 1,525,000 | 370,000 | 82,000 |
| 1922—July | 1,585,000 | 385,000 | 85,000 |
| 1923—January | 1,650,000 | 415,000 | 86,500 |
| 1923—July | 1,700,000 | 430,000 | 88,000 |

*Serial numbers shown represent the approximate first serial for each year.

## UNDERWOOD—continued

### Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

* Denotes models of present line. For descriptions and illustration see Catalog Section.

| Model | Valuation High | Low | Average |
|---|---|---|---|
| **No. 1**—76 characters, regular carriage. Any serial.. | $10.00 | $ 5.00 | $ 5.75 |
| **No. 2**—84 characters, regular carriage. Any serial.. | 10.00 | 5.00 | 5.75 |
| ***No. 3—12", 3—14", 3—16"**—84 characters. Same as Model No. 5 but with 12", 14" or 16" carriage. | | | |
| Serials No. to 82,000 | 10.00 | 5.00 | 8.25 |
| 82,001 to 100,000 | 15.00 | 7.50 | 9.50 |
| 100,000 to 125,000 | 15.00 | 7.50 | 10.00 |
| 125,001 to 150,000 | 20.00 | 10.00 | 15.50 |
| 150,001 to 200,000 | 25.00 | 15.00 | 19.00 |
| 200,001 to 235,000 | 30.00 | 20.00 | 24.00 |
| 235,001 to 250,000 | 32.50 | 22.50 | 28.75 |
| 250,001 to 275,000 | 32.50 | 22.50 | 27.50 |
| 275,001 to 315,000 | 35.00 | 30.00 | 33.00 |
| 315,001 to 350,000 | 37.50 | 35.00 | 35.75 |
| 350,001 and above | 40.00 | 35.00 | 37.00 |
| ***No. 3—18", 3—20", 3—26"**—84 characters. Same as Model No. 5 but with 18", 20" or 26" carriage. | | | |
| Serials No. to 11,500 | 10.00 | 5.00 | 8.75 |
| 11,501 to 18,000 | 15.00 | 7.50 | 10.00 |
| 18,001 to 25,000 | 20.00 | 7.50 | 11.25 |
| 25,001 to 35,000 | 25.00 | 10.00 | 15.50 |
| 35,001 to 45,000 | 27.50 | 15.00 | 20.00 |
| 45,001 to 60,000 | 30.00 | 17.50 | 23.60 |
| 60,001 to 62,000 | 32.50 | 25.00 | 28.75 |
| 62,001 to 70,000 | 35.00 | 30.00 | 32.00 |
| 70,001 and above | 37.50 | 30.00 | 34.50 |
| ***No. 4**—76 characters, regular carriage. | | | |
| Serials No. to 37,500 | 10.00 | 5.00 | 8.25 |
| 37,501 to 247,000 | 10.00 | 5.00 | 8.75 |
| 247,001 to 500,000 | 15.00 | 7.50 | 12.50 |
| 500,001 to 600,000 | 15.00 | 10.00 | 13.45 |
| 600,001 to 750,000 | 17.50 | 10.00 | 14.35 |
| 750,001 to 800,000 | 22.50 | 12.50 | 18.20 |
| 800,001 to 1,000,000 | 23.00 | 17.50 | 20.50 |
| 1,000,001 to 1,160,000 | 30.00 | 25.00 | 26.50 |
| 1,160,001 to 1,250,000 | 32.50 | 27.50 | 29.50 |
| 1,250,001 to 1,350,000 | 35.00 | 27.50 | 31.00 |
| 1,350,001 to 1,500,000 | 38.00 | 32.50 | 35.25 |
| 1,500,001 and above | 40.00 | 32.50 | 36.50 |
| ***No. 5**—84 characters, regular carriage. | | | |
| Serials No. to 247,000 | 10.00 | 5.00 | 8.50 |
| 247,001 to 500,000 | 20.00 | 12.50 | 16.00 |
| 500,001 to 600,000 | 20.00 | 15.00 | 16.50 |
| 600,001 to 750,000 | 25.00 | 17.50 | 19.75 |
| 750,001 to 1,000,000 | 25.00 | 20.00 | 23.00 |

## UNDERWOOD—continued

| Model | Valuation High | Low | Average |
|---|---|---|---|
| ***No. 5—Continued.** | | | |
| Serials No. 1,000,001 to 1,160,000 | 30.00 | 25.00 | 27.90 |
| 1,160,001 to 1,250,000 | 35.00 | 27.50 | 30.00 |
| 1,250,001 to 1,350,000 | 37.50 | 30.00 | 33.00 |
| 1,350,001 to 1,500,000 | 40.00 | 32.50 | 37.00 |
| 1,500,001 and above | 40.00 | 35.00 | 37.60 |
| ***Portable Model:** | | | |
| Serials No. to 7,600 | 15.00 | 10.00 | 12.20 |
| 7,601 to 20,000 | 17.50 | 10.00 | 13.75 |
| 20,001 to 44,500 | 20.00 | 15.00 | 17.50 |
| 44,501 to 85,000 | 20.00 | 12.50 | 17.00 |
| 85,000 and above | 22.50 | 12.50 | 17.50 |

## VICTOR

For description and illustration see Catalog Section.

| | |
|---|---|
| **Model No. 1 or 2** | $ 5.00 |
| **Model No. 3** | 10.00 |
| **Model No. 10** | 20.00 |

**SELECT GRADE TYPEWRITERS**

***Better Than Many Rebuilts***

**PRICED BUT LITTLE ABOVE ROUGHS**

***Order a Few Today and Be Convinced***

**AMERICAN WRITING MACHINE CO.**

**See Adv. page 609**

Confidence—

is the basis of all successful dealing. There may be little difference in typewriters, but there is in the house from which you buy.

***Manufacturers' Typewriter Clearing House***

*193 North Dearborn Street, Chicago.*

# WOODSTOCK

## Construction and Dates of Manufacture

(Serial numbers are approximate)

| Model | Description | First Placed on Market | Discontinued | Serial |
|---|---|---|---|---|
| **No. 3** | | Sept. 1914 | Aug. 1915 | |
| **No. 4** | | Early 1915 | End 1917 | |
| **No. 5D** | Regular carriage, taking paper 10" wide; dead key construction. | Oct. 1916 | Mar. 1920 | |
| **No. 5B** | Regular carriage, taking paper 10" wide; no dead key | Oct. 1916 | Mar. 1920 | |
| **No. 5BW** | Wide carriage model of No. 5B, taking paper 11⅜" wide | | Mar. 1921 | |
| **No. 5DW** | Wide carriage model of No. 5D, taking paper 11⅜" wide | June 1920 | | |
| ***No. 5F** | Wide carriage taking paper 11⅜". Replaced No. 5BW and 5DW. Variable line spacer | Early 1921 | | 70,000 |
| ***No. 6J** | Described in Catalog Section | Jan. 1922 | | 90,000 |
| ***No. 7K** | Described in Catalog Section | Apr. 1923 | | 110,757 |

Models No. 5, 6 and 7 are numbered in the same series.

Models No. 3, 4, 5B and 5D were numbered in code (not regular consecutive serial numbers), making it impossible to give any starting or closing serial numbers for these machines.

## Valuations

**Note:** Valuations shown are for typewriters complete as to parts with regular keyboards, upper and lower case, equipped with Pica type. A deduction of $2.50 is usually made when machines are equipped with Elite or other type faces, and a deduction of $5.00 is usually made for machines equipped to write capital letters only.

* Denotes models of present line. For descriptions and illustration, see Catalog Section.

| Model | | Valuation High | Low | Average |
|---|---|---|---|---|
| **No. 3** | Any serial | $12.50 | $10.00 | $10.75 |
| **No. 4** | Any serial. All numbers not preceded by Code A | 15.00 | 5.00 | 10.00 |
| | All numbers preceded by Code A | 17.50 | 10.00 | 12.50 |
| **No. 5** | Regular 10" carriage. All serials not preceded by Code letter B | 20.00 | 7.50 | 12.00 |
| **No. 5** | Regular 10" carriage. Serials, preceded by Code letter B, No. 15,000 to 25,000 | 22.50 | 7.50 | 11.50 |
| | No. 25,001 to 39,000 | 25.00 | 10.00 | 15.00 |
| | No. 39,001 to 50,000 | 27.50 | 10.00 | 14.50 |
| | No. 50,001 to 75,000 | 20.00 | 15.00 | 19.00 |
| | No. 75,001 and above | 25.00 | 17.50 | 22.50 |
| **No. 5W** | 11⅜" carriage, Serials No. 50,000 and below | 30.00 | 10.00 | 17.50 |
| | Serials No. 50,001 and above | 32.50 | 15.00 | 21.75 |
| ***No. 5F** | Present standard, 11¼" carriage, Serials No. 70,000 to 77,000 | 35.00 | 20.00 | 25.75 |
| | **77,001 to 101,000** | 37.50 | 22.50 | 27.50 |
| | 101,001 and above | 40.00 | 22.50 | 28.25 |
| ***No. 6J** | 14¼" carriage, Serials No. 90,000 to 100,000 | 35.00 | 20.00 | 25.75 |
| | 100,001 and above | 37.50 | 20.00 | 26.50 |
| ***No. 7K** | 18½" carriage, Serials No. 110,757 and above | 37.50 | 20.00 | 26.50 |

## YOST




A front stroke, basket shift, four row keyboard, visible writing, direct inked machine. Sold by the American Writing Machine Company, Newark, New Jersey.

### Valuations

For visible model (Models No. 15, 16, 17, 18, 20, 21, 22 or 23). Any serial; **Valuation** (not generally quoted)....$5.00

## TYPEWRITERS ON WHICH NO VALUATIONS ARE QUOTED

| | | |
|---|---|---|
| Alexander | Franklin | New Century, 5, 6, 7 |
| American | Fitch | Odell |
| Bar Lock | Ford | Peerless |
| Bennet | Fountain | Postal |
| Brooks | Granville | Reliance |
| Caligraph | Hartford | Rem. Sho. Viz. |
| Columbia W. C. | Hall | Remington Nos. 2, 3, 4, 5, 8, 9 |
| Columbia Shift | International | Rem. Sholes, all models |
| Commercial | Junior | Sholes |
| Chicago | Jackson | Stearns |
| Crandall | Jewett | Smith Premier Nos. 1, 3, 5, 6, 9 |
| Daugherty | Keystone | Williams Nos. 1, 2, 3, 4, 6 |
| Densmore | Lambert | Wellington |
| Duplex | Lazaar | Yetman |
| Eclipse | Manhattan | Yost Nos. 1, 2, 4, 5, 6, 7, 8, 9, 10, 11 and W. C. |
| Emerson | Munson | Visagraph |
| Empire | Merritt | |
| Fay Sholes | Niagara | |

Typewriter dealers can double or triple their business, with no additional capital, by reducing their stocks to a small number of machines, for samples or demonstrating, and replacing them, as sold, by rush orders to us.

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

*Denotes Wholesale Dealers. †Denotes Export Dealers.

## *ADDING AND CALCULATING MACHINES*

### California

Los Angeles:
ADDING MACHINE EMPORIUM
1004 South Hill Street
WALLER, J. R.
353 South Los Angeles St. (See Adv't, Page 154)

San Francisco:
CASH MERCANTILE CO.
326 Market Street

### Colorado

Denver:
WESTERN TYPEWRITER SALES CO.
1627 Champa Street

### Georgia

Albany:
WARD-KNIGHT COMPANY
115 North Washington Street

Canon:
BOWERS & COMPANY
20 Main Street

### Illinois

Chicago:
ADDING MACHINE SALES & SERVICE CO.
202 South Clark Street (See Adv't, Page 521)
*MANUFACTURERS TYPEWRITER CLEARING HOUSE
193 N. Dearborn St. (See Adv't, Inside back cover)
PRUITT COMPANY, THE
170 North Wells Street (See Adv't, Page 300)
†*RELIABLE TYPEWRITER & ADDING MACH. CORP.
170 West Washington Street (See Adv't, Page 528)

Elgin:
BECK COMPANY, S. W.,
16 South Spring Street

### Indiana

Indianapolis:
HOWE, LEONARD E.
4328 Washington Blvd.

### Kansas

Concordia:
REGNIER TYPEWRITER SHOP
610½ Washington Street

### Maryland

Baltimore:
MEYERS & MEYERS
223 West Fayette Street

Frederick:
FREDERICK TYPEWRITER EXCHANGE
149 West Patrick Street

### Massachusetts

Boston:
NEW ENGLAND ADDING MACHINE CO.
112 Arch Street
OFFICE APPLIANCE CO., THE
191-195 Devonshire Street

A New Order of Things Commenced—
When we first announced our special rebuilt proposition for dealers.
Many startling changes in prices and policies have been made Our business has increased over three hundred percent.
If you haven't ordered lately, you don't know us as we now are.
*Manufacturers' Typewriter Clearing House*
*193 North Dearborn Street, Chicago*

## Michigan

Ann Arbor: **MORRILL, O. D.**
17 Nickels Arcade

Detroit: **BUSINESS EQUIPMENT CO.**
149 West Lafayette Boulevard

Manistee: **MARTINDILL TYPEWRITER EXCHANGE**

## Missouri

Mexico: **MEXICO TYPEWRITER EXCHANGE**
118 South Washington Street

## New Jersey

Newark: **GENERAL ADDING MACHINE CORPORATION**
569 Broad Street

## New York

New York City: **ABBIT TYPEWRITER & SUPPLY CO.**
38 East Twenty-third Street

**ADVANCE ADDING MACHINE CO.**
246 Broadway (See Adv't, Page 518)

**GRAZE & SADLER**
256 Church Street (See Adv't, Page 515)

†**OFFICE APPLIANCE & EQUIPMENT CO.**
19 Park Place (See Adv't, Page 545)

**VOGEL, GEORGE W.**
206 Broadway (See Adv't, Page 527)

Auburn: **ALLEN, FREDERICK G.**
78 Genesee Street and 1 South Street

Rochester: **LANSING, H. T.**
107 State Street

## Ohio

Toledo: **WATSON, L. N.**
1447½ North Erie Street

## Pennsylvania

Pittsburgh: ***SHATTUCK, V. R., successor to Connell & Shattuck**
427-9 Third Avenue (See Adv't, Page 552)

## Rhode Island

Providence: **OFFICE APPLIANCE CO., THE**
87 Dorrance Street

## Texas

Temple: **CROUCH & COMPANY, J. F.**
20 East Central Avenue

## Washington

Tacoma: **ALLGOOD & COMPANY, H. C.**
1518 Commerce Street

Our tremendous stocks, long term buying contracts and heavy investment in equipment, are all based on a volume of business that can only come from satisfied customers. We've got to please you to make our business profitable.

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

## Wisconsin

**Milwaukee:**
**MOSCRIP COMPANY, ROBERT**
175 Fifth Street

**Racine:**
**FAIRBANKS, H. S.**
836 Wisconsin Street

## *ADDRESSING MACHINES*

## California

**San Francisco:**
**WILBER, FRANK E.**
595 Market Street

## Illinois

**Chicago:**
**ECONOMY ADRRESSING MACHINE EXCHANGE**
538 South Clark Street
**OFFICE ECONOMIES CO.**
440 South Dearborn Street
**THE PRUITT COMPANY**
170 North Wells Street

## Ohio

**Toledo:**
**WATSON, L. N.**
1447½ North Erie Street

## *BOOKKEEPING MACHINES*

## Illinois

**Chicago:**
**MALONEY-GILMORE COMPANY**
508 South Dearborn Street
**REBUILT ADDING MACHINE COMPANY**
333 South Dearborn Street (See Adv't, Page 534)
**RELIABLE TYPEWRITER & ADDING MACHINE CO.**
170 West Washington Street (See Adv't, Page 528)

## New York

**New York City:**
**OFFICE APPLIANCE & EQUIPMENT CO.**
19 Park Place (See Adv't, Page 545)
**INDEPENDENT TYPEWRITER CO.**
245 Broadway (See Adv't, Page 518)
**TRIGGS ACCOUNTING MACHINE CORPORATION**
407 Broadway
**ABBIT TYPEWRITER & SUPPLY CO.**
38 East Twenty-third Street

## *CASH REGISTERS*

(See Adv't. of Cash Register Dealers' Ass'n., Page 560)

## California

**Fresno:**
**SHULER FIXTURE CO., C. O.**
949 "L" Street

**Los Angeles:**
**CASH REGISTER EXCHANGE**
408 South Los Angeles Street
**WALLER, J. R.**
353 S. Los Angeles Street (See Adv't, Page 154)

**San Francisco:**
**CASH MERCANTILE CO.**
326 Market Street
**SAN FRANCISCO CASH REGISTER CO.**
411 Market Street

## Illinois

**Chicago:**
***CASH REGISTER EXCHANGE**
125 West Lake Street (See Adv't, Page 563)

## Directory Section — Dealers and Repairs

### Illinois—continued

Chicago:
- *CHICAGO CASH REGISTER EXCHANGE
  133 West Lake Street (See Adv't, Page 571)
- COHEN & SON, NATHAN
  1011 West Madison Street

### Iowa

Des Moines:
- BOLTON & HAY
  216 Fourth Street

### Louisiana

Lake Charles:
- ROLLOSSON STATIONERY CO.

New Orleans:
- CRESCENT CASH REGISTER AGENCY
  318 Baronne Street

### Maryland

Baltimore:
- BALTIMORE CASH REGISTER EXCHANGE
  224 North Gay Street
- LUCY & COMPANY, M. W.
  118 West Fayette Street

Frederick:
- FREDERICK TYPEWRITER EXCHANGE
  149 West Patrick Street

### Massachusetts

Boston:
- KNIGHT, FRANK T.
  10 Blackstone Street

### Michigan

Detroit:
- CADILLAC USED CASH REGISTER CO.
  1451 Gratiot Avenue
- DETROIT USED CASH REGISTER CO.
  1357 Gratiot Avenue
- WAYNE STORE SPECIALTY COMPANY
  1557 Gatiot Avenue

### Minnesota

Minneapolis:
- CASH REGISTER EXCHANGE CO.
  821 Hennepin Avenue

St. Paul:
- BONBRIGHT, J. H.
  476 Robert Street

### Missouri

Kansas City:
- LEEDS SHOW CASE & FIXTURE CO.
  Seventh and Delaware Sts. (See Adv't, Page 585)

Mexico:
- MEXICO TYPEWRITER EXCHANGE
  118 South Washington Street

St. Louis:
- HOWE SCALE COMPANY
  512 St. Charles Street
- SOUTHERN CASH REGISTER COMPANY
  1016 Pine Street

### Nebraska

Omaha:
- OMAHA FIXTURE & SUPPLY COMPANY
  S. W. Corner Eleventh and Douglas Streets

Dealers—
Modern efficiency demands that that part of rebuilding requiring special costly equipment, be done in quantities in one central establishment.
We and our Special Rebuilts are the answer.

*Manufacturers' Typewriter Clearing House*
*193 North Dearborn Street,* *Chicago.*

## New Jersey

**Newark:**
ESSEX CASH REGISTER CO.
267 Market Street
GENERAL ADDING MACHINE CORPORATION
569 Broad Street

## New York

**New York City:**
ACME CASH REGISTER CO.
346 West Forty-second Street (See Adv't, Page 565)

**Brooklyn:**
AMERICAN CASH REGISTER CO.
57 Fourth Avenue
CASH REGISTERS DEALERS ASSN., INC.
189 Flatbush Avenue (See Adv't, Page 560)
MERCHANTS' CASH REGISTER EXCHANGE, INC.
189 Flatbush Avenue

**Rochester:**
EDDY, THOS. H.
14 North Water Street
WILE COMPANY
72 North Street (See Adv't, Page 591)

## Ohio

**Cincinnati:**
LOTH, C.
520 East Pearl Street
OHIO HOWE SCALE COMPANY
321 Main Street

## Pennsylvania

**Lancaster:**
RUSSELL SALES COMPANY

**Philadelphia:**
PHILADELPHIA CASH REGISTER EXCHANGE
1101 Ridge Street
UNITED CASH REGISTER COMPANY
1211 Filbert Street

**Pittsburgh:**
HOWE SCALE COMPANY
110 Wood Street

## Texas

**Dallas:**
CASH REGISTER EXCHANGE
2024 Main Street

**Temple:**
CROUCH & COMPANY, J. F.
20 East Central Avenue

## Washington

**Tacoma:**
ALLGOOD & COMPANY, H. C.
1518 Commerce Street

## Wisconsin

**Fond du Lac:**
ADDING MACHINE & CASH REGISTER EXCHANGE
162 South Main Street

**Manitowoc:**
BADGER SPECIALTY CO.

**Milwaukee:**
MOSCRIP COMPANY, ROBERT
175 Fifth Street

## Canada

**Toronto, Ont.:**
TORONTO CASH REGISTER CO.
115 Church Street

It isn't difficult to understand our low prices. Our large buying capacity and complete, modern rebuilding equipment, mean savings to us and are reflected in prices to you.

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

## *CHECK WRITERS*

### California

Fresno:
SHULER FIXTURE CO., C. O.
949 "L" Street

### Illinois

Chicago:
*AMERICAN CHECKWRITER CO.
1103 Manhattan Building
*MANUFACTURERS TYPEWRITER CLEARING HOUSE
193 North Dearborn Street
*PRUITT COMPANY, THE
170 North Wells Street
*RELIABLE TYPEWRITER & ADDING MACH. CORP.
170 West Washington Street

Elgin:
BECK COMPANY, S. W.
16 South Spring Street

### Michigan

Ann Arbor:
MORRILL, O. D.
17 Nickels Arcade

Manistee:
MARTINDILL TYPEWRITER EXCHANGE

### New York

New York City:
*AA1 CHECK WRITER CO.
111 Nassau Street
*CHECK WRITER AGENCY
116 Nassau Street
*CHECK WRITER EXCHANGE CO.
152 Fulton Street

### Ohio

Toledo:
WATSON, L. N.
1447½ North Erie Street

### Wisconsin

Milwaukee:
MOSCRIP COMPANY, ROBERT
175 Fifth Street

Racine:
FAIRBANKS, H. S.
836 Wisconsin Street

## *DICTATING MACHINES*

### California

San Francisco:
CALLAHAN, L. C.
595 Market Street
WILBER, FRANK E.
595 Market Street

ANY SIZE FULL SIZE **RUBBER COVERS** ANY QUANTITY BEST QUALITY

**Your Name Free on Orders for 100**

**AMERICAN WRITING MACHINE CO.**

**See Adv. Page 609**

### Illinois

Chicago:
*MANUFACTURERS TYPEWRITER CLEARING HOUSE
193 North Dearborn Street
*OFFICE ECONOMIES CO.
440 South Dearborn Street
*THE PRUITT COMPANY
170 North Wells Street

### New York

New York City: *DICTATING EQUIPMENT CO.
5 Beekman Street

## *DUPLICATING MACHINES*

### California

San Francisco: WILBER, FRANK E.
895 Market Street

### Illinois

Chicago:
*OFFICE ECONOMIES CO.
440 South Dearborn Street
*PRUITT COMPANY, THE
170 North Wells Street
Elgin: BECK COMPANY, S. W.
16 South Spring Street

### Massachusetts

Boston: ACME DUPLICATING EXCHANGE
39 Court Street

### Michigan

Manistee: MARTINDILL TYPEWRITER EXCHANGE

### New York

Syracuse: WALES COMPANY, R. W.
115 East Genesee Street

### Ohio

Toledo: WATSON, L. N.
1447½ North Erie Street

### Pennsylvania

Pittsburgh: DURKIN, REEVES & CO.
339 Fifth Avenue

### Canada

Toronto, Ont.: BUSINESS APPLIANCE EXCHANGE
Post Office No. 74, Terminal A, New Union Station

***Your Repair Department Not Complete***
**Without**
**Transparent Varnish, Glossy Black, Steel Black,**
**Transfer Sizing.**
**45c for 4-oz. can. ORDER TODAY**
**AMERICAN WRITING MACHINE CO.**
**See Adv. page 609**

## *SCALES*

### California

Fresno:
KINCHELOE, C. M.
1209 Broadway
SHULER FIXTURE CO., C. O.
949 "L" Street

Los Angeles:
CASH REGISTER EXCHANGE
408 South Los Angeles Street

San Francisco:
*SAN FRANCISCO CASH REGISTER CO.
411 Market Street

### Connecticut

New London:
RAUB, JOSEPH L.
111 Golden Street

### Illinois

Chicago:
COHEN & SON, NATHAN
1011 West Madison Street
*FOOTLIK BROS.
172 North Halsted Street

### Michigan

Manistee:
MARTINDILL TYPEWRITER EXCHANGE

### New York

Brooklyn:
AUSTIN, W. C.
1233 DeKalb Avenue

### Pennsylvania

Mahanoy City:
MELLEY, J. F.
1206 East Centre Street

Pittsburgh:
HOWE SCALE CO., THE
110 Wood Street

### Wisconsin

Madison:
MADISON SCALE SERVICE
611 North Francis Street

## *STORE AND OFFICE FIXTURES*

### California

Fresno:
SHULER FIXTURE CO., C. O.
949 "L" Street

### Connecticut

New London:
RAUB, JOSEPH L.
111 Golden Street

### Illinois

Elgin:
BECK COMPANY, S. W.
16 South Spring Street

When a house sets out to give you a fair deal, don't you want to support it with your patronage?

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

## Kentucky

Covington:
RELIABLE SAFE & LOCK CO., THE
Russell, Fourteenth and Spring Streets

## Louisiana

Lake Charles:
FERRELL-BRAYTON PRINTING CO.

## New York

Elmira:
ELMIRA STORE FIXTURE CO.
113 Baldwin Street

## Pennsylvania

Pittsburgh:
HOWE SCALE CO., THE
110 Wood Street

## South Carolina

Columbia:
COLUMBIA STORE FIXTURE CO.
1116 Lady Street

## Tenessee

Memphis:
McCOY, B. F.
90 South Second Street

## *TYPEWRITERS*

## Arkansas

Fort Smith:
BALDWIN'S TYPEWRITER EXCHANGE
8 Hotel Main Court

## California

Berkeley:
*HARMS, MORSE & PERKINS
2166 Shattuck Avenue, (See Adv't Page 606)

Fresno:
SHULER FIXTURE CO., C. O.
949 "L" Street

Long Beach:
HIRD TYPEWRITER CO.
140 East Third Street

Los Angeles:
AMERICAN WRITING MACHINE CO.
732 So. Spring Street (See Adv't, Page 609)
TYPEWRITER SHOP, THE
613 South Spring Street

Modesto:
LEE BROTHERS
1022 Eye Street

Oakland:
AMERICAN WRITING MACHINE CO.
334 Twelfth Street (See Adv't, Page 609)

San Diego:
AMERICAN WRITING MACHINE CO.
909 Third Street (See Adv't, Page 609)
BUSINESS EQUIPMENT CO.
936 Broadway

San Francisco:
AMERICAN WRITING MACHINE CO.
506 Market Street (See Adv't, Page 609)
GUARANTY TYPEWRITER CO.
365 Market Street
†*REGAL TYPEWRITER CO., INC.
7-9 First Street (See Adv't, Page 601)

The basis of our business is the friendship we have developed with our customers.
BUSINESS CAN BE HUMAN.
*Manufacturers' Typewriter Clearing House*
*193 North Dearborn Street, Chicago.*

## Colorado

Denver:
AMERICAN WRITING MACHINE CO.
1723 Champa Street (See Adv't, Page 609)
WESTERN TYPEWRITER SALES CO.
1627 Champa Street

## Georgia

Atlanta:
AMERICAN WRITING MACHINE CO.
135 Peachtree Arcade (See Adv't, Page 609)

Valdosta:
BALDWIN, LEONARD A.
1201 North Ashley Street

## Illinois

Chicago:
AMERICAN WRITING MACHINE CO.
329 South Dearborn Street (See Adv't, Page 609)
AMERICAN WRITING MACHINE CO.
119 North Clark Street (See Adv't, Page 609)
†*MANUFACTURERS' TYPEWRITER CLEAR'G HOUSE
193 N. Dearborn St. (See Adv't, Inside back cover)
†*REGAL TYPEWRITER CO., Inc.
12-14 South Jefferson Street (See Adv't, Page 606)
†*RELIABLE TYPEWRITER & ADDING MACH. CORP.
170 West Washington Street (See Adv't, Page 528)
*SMITH TYPEWRITER SALES CO.
360 5ast Grand Avenue (See Adv't, Page 617)
*TYPEWRITER REBUILDING CO.
2408-12 West Lake Street (See Adv't, Page 618)

Elgin:
BECK COMPANY, S. W.
16 South Spring Street

Marion:
HICKS, VERNER

## Indiana

Indianapolis:
AMERICAN WRITING MACHINE CO.
30 South Pennsylvania Street (See Adv't, Page 609)
HOWE, LEONARD E.
4328 Washington Boulevard

## Iowa

Cedar Rapids:
MERVEAUX TYPEWRITER EXCHANGE
10-11 Ely Building

Des Moines:
OFFICE EQUIPMENT CO., THE
417 Locust Street

Oelwein:
TYPEWRITER EXCHANGE
907 West Charles Street

## Kansas

Concordia:
REGNIER TYPEWRITER SHOP
610½ Washington Street

Kansas City:
PAYNEE COMPANY
Rosedale Station

The correct relation of low price to quality is made possible by our improved rebuilding facilities.

Superior mechanical equipment insures uniform, dependable quality; large production results in reduced prices.

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

## Louisiana

Lake Charles:
FERRELL-BRAYTON PRINTING CO.
ROLLOSSON STATIONERY COMPANY
905 Ryan Street

New Orleans:
AMERICAN WRITING MACHINE CO.
345 Baronne Street (See Adv't, Page 609)

## Maryland

Baltimore:
AMERICAN WRITING MACHINE CO.
16-18 Park Avenue (See Adv't, Page 609)

Frederick:
FREDERICK TYPEWRITER EXCHANGE
149 West Patrick Street

## Massachusetts

Boston:
AMERICAN WRITING MACHINE CO.
119 Franklin Street (See Adv't, Page 609)
OFFICE APPLIANCE CO., THE
191-195 Devonshire Street

Greenfield:
GREENFIELD OFFICE SUPPLY CO.

Lawrence:
TYPEWRITER SHOP
814 Bay State Building

## Michigan

Ann Arbor:
MORRILL, O. D.
17 Nickels Arcade

Detroit:
AMERICAN WRITING MACHINE CO.
1253 Griswold Street (See Adv't, Page 609)
BUSINESS EQUIPMENT CO.
149 West Lafayette Boulevard

Escanaba:
OFFICE SERVICE COMPANY
815 Ludington Street
TYPEWRITER SALES CO.
317-26 Tussing Building

Manistee:
MARTINDILL TYPEWRITER EXCHANGE

## Minnesota

Mankato:
OFFICE SPECIALTIES CO.
304 South Front Street

Minneapolis:
AMERICAN WRITING MACHINE CO.
724 Marquette Avenue (See Adv't, Page 609)

St. Paul:
AMERICAN WRITING MACHINE CO.
150 East Fifth Street (See Adv't, Page 609)

## Missouri

Kansas City:
AMERICAN WRITING MACHINE CO.
905 Grand Avenue (See Adv't, Page 609)

Mexico:
MEXICO TYPEWRITER EXCHANGE
118 South Washington Street

St. Louis:
AMERICAN WRITING MACHINE CO.
807 Pine Street (See Adv't, Page 609)

## Nevada

Reno:
WESTERN TYPEWRITER SUPPLY
41 East Second Street

In framing our business policies we have worked from the viewpoint of our customers. You will profit by dealing where your conditions are understood.

*Manufacturers' Typewriter Clearing House*

*193 North Dearborn Street, Chicago.*

## New Hampshire

Claremont:
FIFIELD, WILLIAM H.
31 Pleasant Street

## New Jersey

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40 Montgomery Street

Newark:
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449 Central Avenue
34 Clinton Street
(See Adv't, Page 609)
NEWARK TYPEWRITER EXCHANGE
9 Beaver Street

## New York

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†*AMERICAN WRITING MACHINE CO.
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569 Melrose Avenue
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†*BROWN TYPEWRITER CO., INC., THE
298 Broadway (See Adv't, Page 605)
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312 Broadway (See Adv't, Page 606)
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29 East 125th Street

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117 Franklin Street (See Adv't, Page 609)

Rochester:
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SPEAR, RUSSELL E.
503 De Mers Avenue

## Ohio

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148 East Fourth Street (See Adv't, Page 609)
REBUILT TYPEWRITER & SUPPLY CO.
220 East Sixtieth Street

Cleveland:
AMERICAN WRITING MACHINE CO.
34 Euclid Arcade (See Adv't, Page 609)

Dayton:
OFFICE EQUIPMENT CO.
533 Ludlow Arcade

Massillon:
GENERAL TYPEWRITER CO.
107 North Erie Street

Toledo:
WATSON, L. N.
1447½ North Erie Street

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TYPEWRITER SERVICE CO.
City National Bank Bldg.

Oklahoma City:
OAKES TYPEWRITER EXCHANGE, INC.
204 Oil Exchange Bldg.

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Philadelphia: **AMERICAN WRITING MACHINE CO.**
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Pittsburgh: **AMERICAN WRITING MACHINE CO.**
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**DIAMOND TYPEWRITER CO.**
434 Diamond Street

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1503 Commerce Street (See Adv't, Page 609)

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## Utah

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2422 Hudson Avenue

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521 State Street

Milwaukee: **AMERICAN WRITING MACHINE CO.**
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